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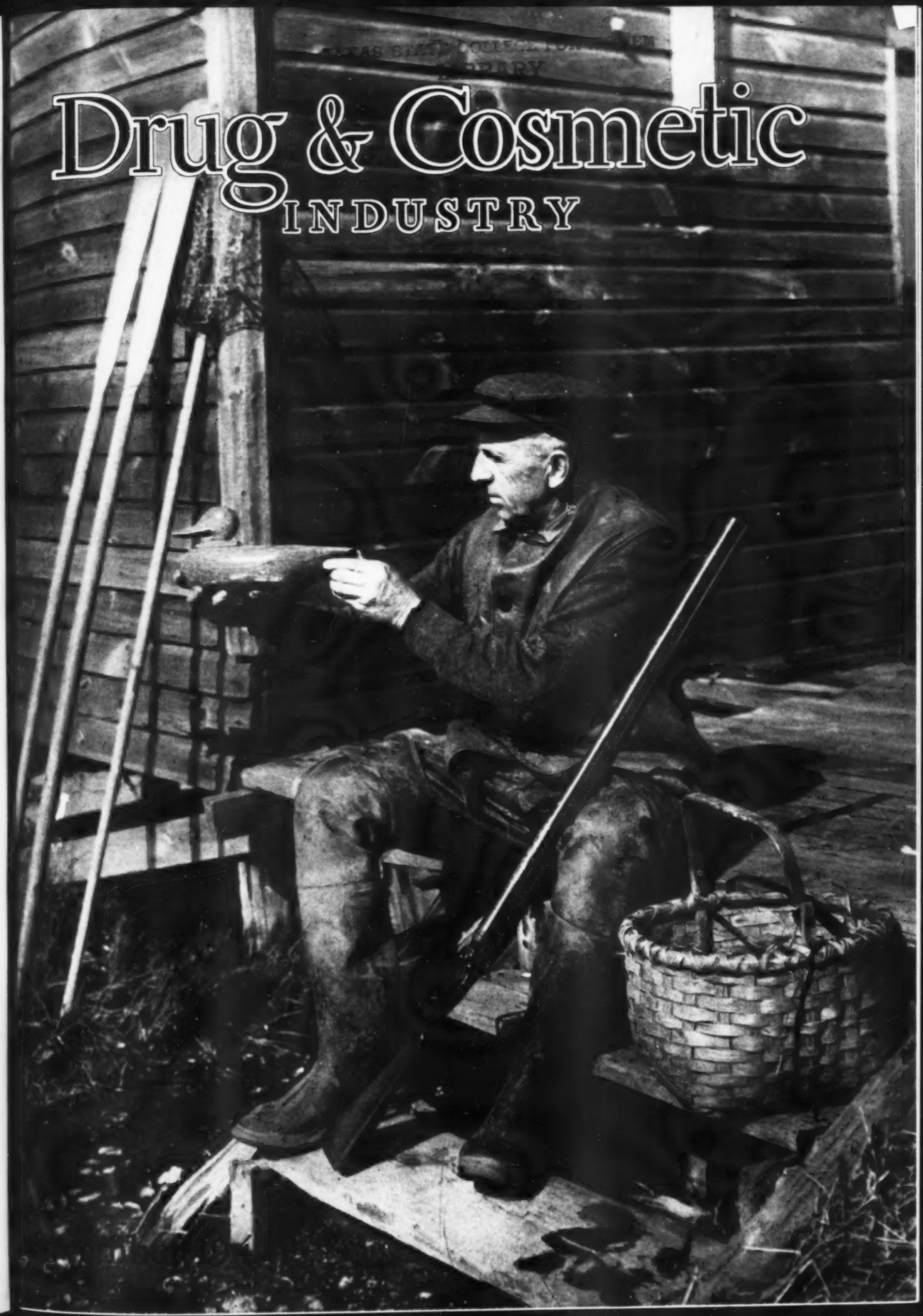
Drug & Cosmetic INDUSTRY



What's in Powdered Sugar

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Whether it's sugar for frosting cakes or sweetening for drinks, Snow Top U. S. P. precipitated calcium carbonate can be used as an anti-caking medium in powdered sugar. Similarly, it is used in free-running salt, as an ingredient in antacid tablets, and in a host of other edible products because it meets the Pure Food and Drug Act and U. S. P. requirements.

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SPECIFICATION RANGES FOR SNOW TOP

Grade	Rattle cc.	Flow cc.	2-Hour cc.	Final cc.	Drop Density g/cc.	Drop Density lbs./ft.
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Light	20–30	27–40	45–70	40–55	.550–0.475	34.3–29.6
Medium	17–23	19–27	25–45	24–40	.675–0.550	42.1–34.3
Heavy	15–17	15–19	20–25	19–24	.800–0.675	49.9–42.1
Extra Heavy	11–15	11–15	15–20	15–19	.950–0.800	59.3–49.9

Snow Top Precipitated Calcium Carbonate ★ Abietic Acid ★ Nuchar Activated Carbons ★ Liquid Caustic Soda ★ Chlorine ★ ★ Indulin (Lignin) ★ Ligro Crude Tall Oil ★ Indusoil Distilled Tall Oil ★ Tall Oil Pitch ★ Sulphate Wood Turpentine

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Drug & Cosmetic INDUSTRY

NOVEMBER 1945

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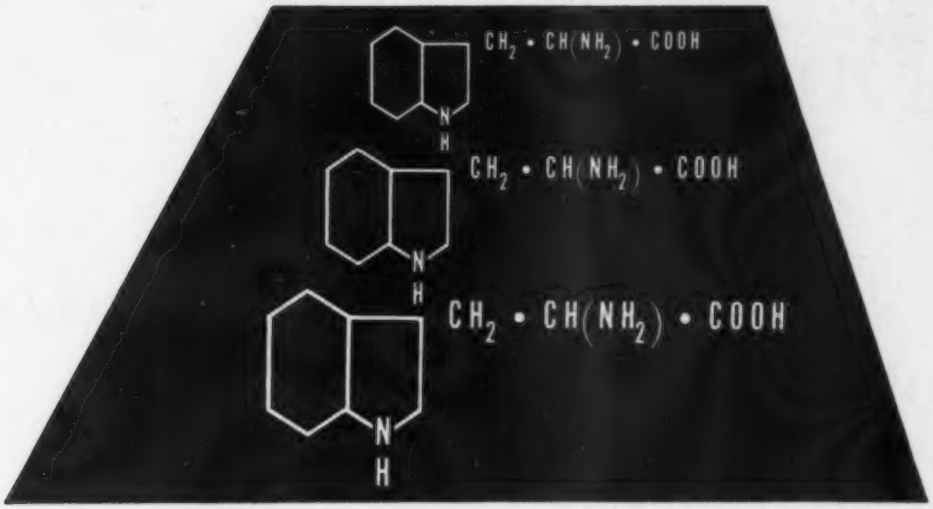

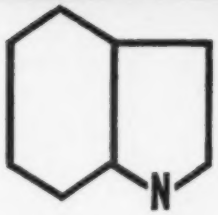

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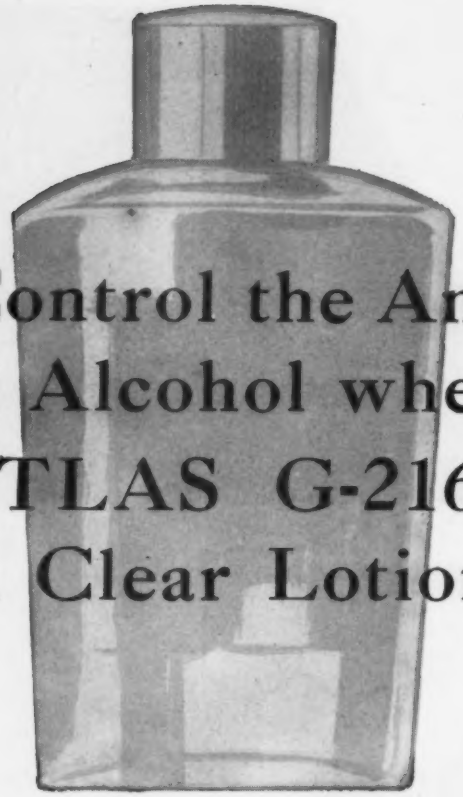

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Atlas G-2160 and Atlas Tween 20 have simplified and improved formulation of high perfume oil content lotions, face lotions, colognes, alcoholic hair preparations and after shave lotions. If your problems include the use of solubilizers, we will be glad to consult with you.

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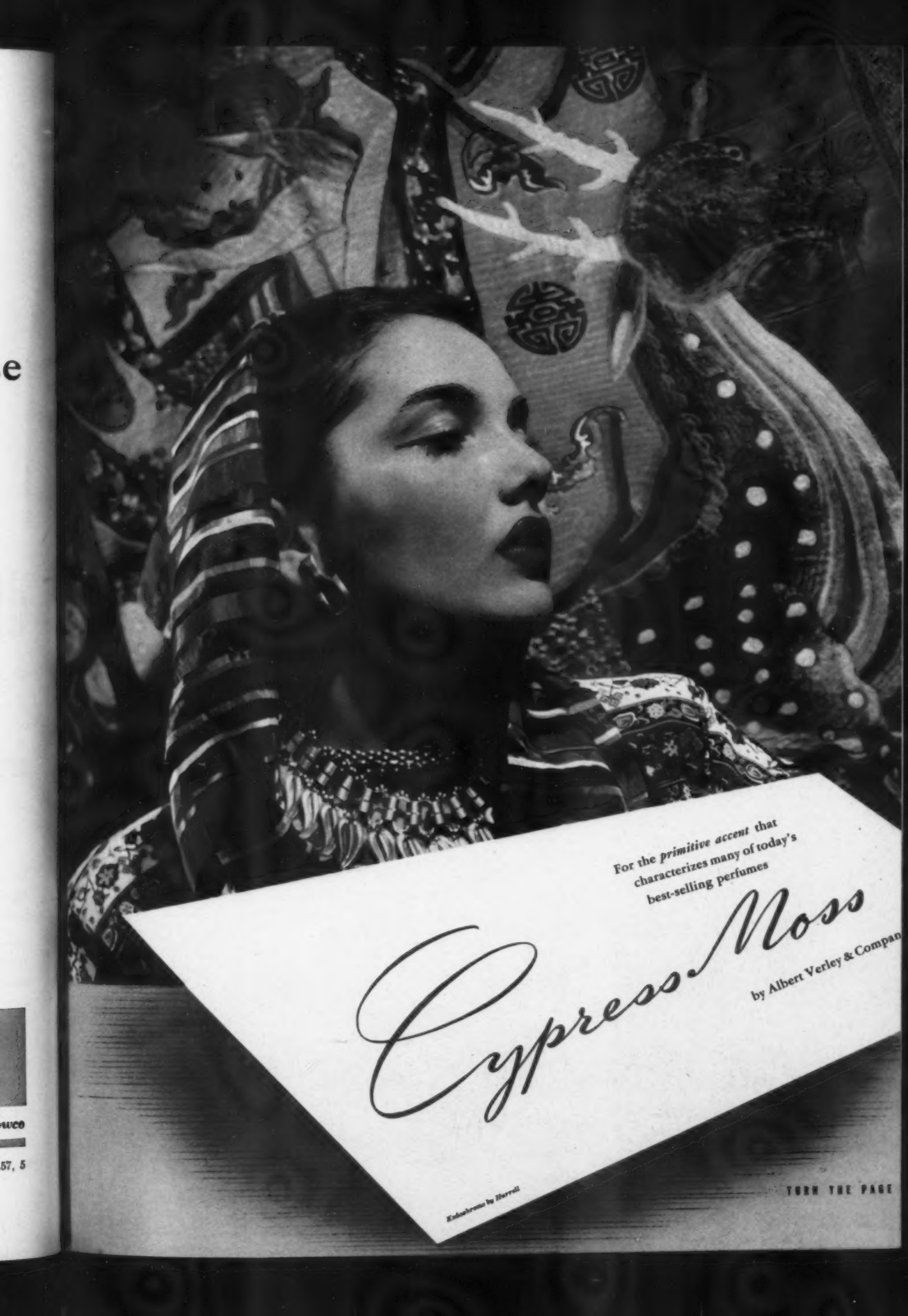
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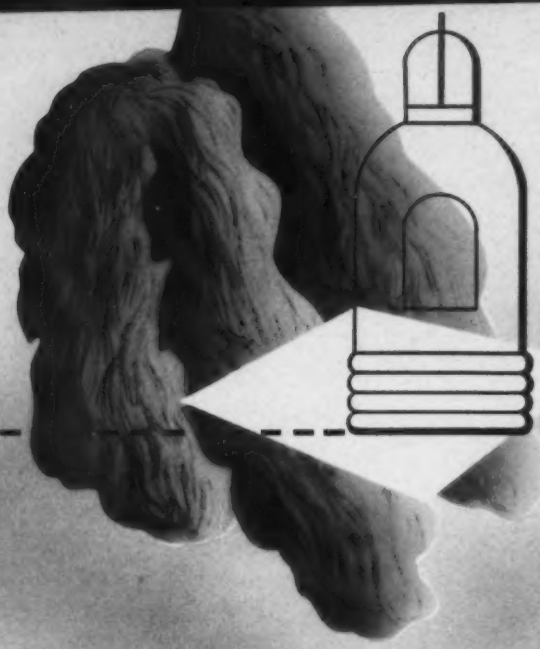

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INSIDE NEWS

NOVEMBER PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y. 1945

Canned Foods Provide Low-Cost Source of Ascorbic Acid

Before the age of steam, and for hundreds of years, seamen on long voyages were victims of scurvy. As we all know now, this was due to the lack of variety in the food on shipboard. But it was not until 1600 that the disease was successfully challenged. For then it was discovered that by distributing a ration of lemon juice on long trips, British seamen were protected against scurvy. Later on, the use of lime juice gave them the name of "Limeys".

A long period of trial and error set in, and it was not until recent years that the ascorbic acid in the citrus juices was found to be the anti-scurvy ingredient. Ascorbic acid, also known as vitamin C, is usually found in fresh fruit and vegetables.

When the diet does not furnish a sufficient amount of vitamin C, the deficiency can be overcome by a manufactured pure crystalline vitamin C. The product can be bought at practically all drug stores and is inexpensive enough to compete with citrus fruits as a source of ascorbic acid. A pound of this manufactured vitamin C has the same scurvy-preventing power as a ton of oranges and costs no more. One pound of vitamin C will prevent scurvy in one hundred adults for three months.

Patients suffering from gastric or duodenal ulcer, diabetes, or certain allergic diseases are sometimes advised by their physicians to give up fresh vegetables and fruits. Not eating vegetables and fruits often paves the way for scurvy and other vitamin-deficiency diseases. In such cases, these diseases can be prevented by taking the required amount of vitamin concentrates or synthetic vitamins.

Most fresh fruits contain some vitamin C. Amounts differ, though, for the same fruits according to variety. Juices from oranges, lemons and grapefruit rate highest in vitamin C content. Weight for weight, they are equally potent.

Orange juice is equally potent whether fresh, properly canned, or chilled and frozen. In contrast, oranges in storage for a month lose about 40 percent of their potency. Anyone eating oranges that have been in storage a month will have to eat more oranges to mak up for the storage loss.

Orange and lemon peel, on the basis of weight, are from two to three times as potent as the juice. Yet when they are processed into marmalade, their ascorbic acid content is negligible.

Tomato juice has about half the vitamin C content of citrus juices. And here too, we find that the canned juice is as good as the fresh juice.

The quantities of nearly all non-citrus fruits that can be included in the ordinary diet gives too little vitamin C to be worth considering. Exceptions to this are strawberries, raspberries and gooseberries. On a weight basis, they are about half as rich as orange juice. And, except during the peak of the season, they are uneconomical in comparison with other equally good sources of ascorbic acid.

Potatoes have been the chief source of vitamin C for most people for the past century and a half. Uncooked, potatoes contain from 35 to 75 milligrams per pound. However, much is lost in cooking if they are sliced before cooking. A potato, cooked whole, contains about 15 milligrams.

Fresh raw cabbage is one of the cheapest rich vegetable sources of vitamin C. It contains from 100 to 200 milligrams per pound before cooking. Cooking kills nearly all the vitamin.

Cow's milk is also a poor source because half the vitamin C is lost in pasteurization. Bottle-fed babies need a supplement of citrus fruit and tomato juice. On the other hand, most canned condensed milks retain a considerable portion of their vitamin C; the modern roller-drying process preserves nearly all the vitamin.

Canned orange juice is considered by authorities to lead all other canned foods in ascorbic acid values. Research has established an average of 39.4 mg. per 100 gm. A single 8-ounce glass of canned orange juice can be expected to supply more than the recommended daily allowance of 75 mg.

Two other good sources of ascorbic acid in cans are canned grapefruit juice (33.8 mg. per 100 gm.) and canned grapefruit segments (24.6 mg. per 100 gm.). And canned foods compare favorably with fresh foods because of the relatively small average losses in the commercial canning process.

Because all canned foods are *processed* — ready to warm or chill and eat — they rate high in nutritive values. This contrasts with values quoted for certain raw foods, including some vegetables, which lose much of their vitamin potency both in transit from field to kitchen and in preparation in homes. 1117

Food for Yeast

There has been much research and much speculation as to what elements in bread dough causes the rapid production of gas by yeast — a production not equalled in any of the synthetic media which had been tried. Now a group of research workers announce that the essential ingredients are potassium, magnesium, phosphate and sulphate ions, sugar, a yeast-available nitrogen compound, and the vitamins thiamine, pyridoxine, and nicotinic acid.

With all of these, the yeast is reported to give a gas-production curve like that for flour with salt and a good source of nitrogen. Without any one of the announced essential ingredients the rate decreases. 1118

Electronics for Blanching

Blanching vegetables for freezing or dehydration in order to produce a negative catalase test involves a loss of vitamins and frequently a loss of texture of the vegetables. Electronic heating accomplishes, it is found, the same enzyme inactivation, with an almost negligible loss of ascorbic acid, and great improvement in texture retention. 1119

New Wire Coatings Last Longer

Brittleness and diminished adhesion, resulting from oxidation ageing, have always been a drawback to the use of lacquer coatings on aluminum wire. Wires coated with oil-free phenolic lacquers, which do not absorb oxygen, can be stored for six months and used at temperatures up to 135°-150° C. 1120

New Stronger Insecticide

Benzene hexachloride, new insecticide (called 666 in Great Britain) has been proved to be nine or ten times more toxic than DDT when tested in deodorized kerosene insecticide sprays against houseflies. DDT was shown to be approximately twice as toxic as pyrethrins. Both DDT and benzene hexachloride were found to be less effective than pyrethrins in knock down value. 1121

Even Used Cans Proven Good

Discarded No. 2 tin cans have been shown to have a definite value in a recent test. After the tins were thoroughly cleaned, both red and black raspberries were frozen in the cans, which were covered by a sheet of cellophane or waxed paper held securely in place by a tight band or string. They were examined at monthly intervals. After seven months' storage, the fruit was found to be kept as well as those in sealed cellophane containers. 1122

...there's nothing like cans!

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Household Fly Spray

Usually 1 plus 1 equals 2. But, for some insecticides, chemists have proved recently that 0 plus 1 may make at least 3.

Sesamine comes from sesame oil and will kill no flies. Pyrethrum kills many flies. Mix these two together, and the mixture will kill three to four times as many flies as pyrethrum alone. The practical result is a more deadly household fly spray now on the market. In this case, 0 plus 1 equals at least 3.

When we entered the war, U. S. Department of Agriculture chemists made use of just such a mixture in the "aerosol bomb". This bomb is a spray device used by the armed forces to protect troops against disease by killing mosquitoes and flies in tents, airplanes, barracks and mess halls. It is a fortunate thing for the soldiers that some insecticides do not act according to arithmetic.

Chemists call this effect a synergy. Synergy means that two substances working together produce a greater effect than the sum of each when working separately. Applied to the farm, synergists increase the effectiveness of insecticides as they are used against crop pests. This saves time and money. It conserves materials. In the case of the aerosol bomb, the spray is not only more effective . . . it helps save more lives and better protects public health. After the war it may serve this same purpose in the farm home.

So far, synergists have been most practical in pyrethrum mixtures and against household and disease-carrying pests such as the mosquito and housefly. The right combination of synergist with rotenone, nicotine, DDT, or other insecticides has not yet been found. Experiments are seeking synergists that will help farmers combat crop pests at less cost. When some synergist makes 0 plus 1 equal 3 on the farm, it will mean considerable savings to farmers, and more effective pest control. 1123

Selecting Tomatoes for Higher Vitamin Content

Tomatoes are a popular food. Their vitamin and mineral contents are their most valuable contribution to human nutrition. Studies have been made with large numbers of well known commercial canning varieties to find their nutritional value. In connection with the study, bio-chemists developed rapid determinations for certain vitamins. This was necessary because of the large numbers of tomato fruits that had to be tested quickly.

During the past season the most suitable commercial varieties were crossed with wild relatives from South America. The latter types have tested as much as threefold the vitamin C content of the highest commercial variety. Conclusions of other nutritional work are equally as interesting. 1124

Technical Topics

ASCORBIC ACID ADDED TO MILK — Ascorbic acid can be added to evaporated milk in sufficient quantity to bring the total to 100 mg. per liter on a reconstituted basis, and this amount is maintained well in storage. Thus, with the customary vitamin D, evaporated milk makes another advance as a baby food. 1125

BETTER CARP — Carp was "very favorably" received by a large test group recently. In canning, the fish is steamed, then flaked, filled in to the cans and processed. Its proponents claim that it tastes like practically anything — chicken, beefsteak, tunafish — except carp. 1126

SUPERIOR CELLULOSE—A new method announced for preparing a superior cellulose includes the use of the chemical properties of soap. 1127

POLISHING COMPOSITIONS — A new formula is reported for a concentrated emulsifying agent in polishing compositions using soap. 1128

PROTECTS CHROME YELLOW — Chrome yellow (lead chromate) is made proof against the darkening effects of exposure to light by the addition of small proportions of white hydrous oxides of aluminum and related elements (titanium) and a colorless compound of a rare earth metal (cerium hydrous oxide). 1129

PRECIPITATED SULPHUR SUSPENSION MORE STABLE — Suspension of precipitated sulphur, in lotions and similar preparations is finer and more stable when methylcellulose is added to the liquid vehicle. 1130

SULFA DRUGS AND DYES — It is reported that sulfa drugs can be made effective against bacteria by mixing them with certain dyes. The discoverer promises therapeutic value. 1131

ASBESTOS PAINT — Asbestos paint is offered as better than cresylic compositions for the protection of structural timbers, against termites and other wood-boring insects. The paint contains 10 percent of short-fiber asbestos in a quick-drying asphalt-piling coating. 1132

CRAYONS WRITE ON WET GLASS — Crayons which write facilely on glass, even when glass is wet and cold, is possible when about 7 percent of a cationic detergent, such as cetyltrimethyl-ammonium bromide, is added to the paraffin-beeswax-petrolatum base in which the fat-soluble dye is held. 1133

DEWAXING LAC — A simplified process for the dewaxing of lac is reported by washing the seedlac with dilute alkali solution, dissolving in heated sodium carbonate solution, straining, refluxing with sodium carbonate, cooling, filtering, precipitating with dilute sulphuric acid and drying. 1134

GLYCERINE — Glycerine is now said to be produced by action of a strain of bacteria on a glucose solution. 1135

EFFECTIVE OIL FOR FLY SPRAY — Recent research shows that Oil of Backhousia is the most effective of essential oils as an activator for pyrethrins in fly spray. 1136

DYESTUFF REVEALED LEAKS—Fluorescein L T, a strong dyestuff, was used to locate breaks in the huge pipeline carrying fuel across the English Channel. The dye produced large colored patches on the sea surface so that divers could quickly repair the damage. 1137

POLISHING WITH COFFEE GROUNDS —Coffee grounds have been found to have the right degree of abrasiveness for cleaning and polishing airplane cylinders by a prominent airline. 1138

GERM-KILLER — Burdock weed, a forgotten old remedy, is now found to have the power to kill a number of germs. 1139

EXPLOSIVE IMPROVES OILS — Pentaerythritol, long recognized as a powerful explosive, also improves oils and resins for surface coatings. Early in the war, the fast and hard-drying oils essential for varnish, paint, enamel, printing ink and linoleum were imported from the Far East. Every effort was made to improve the lower and softer drying domestic linseed and soybean oils. Pentaerythritol has recently been developed as a suitable substitute and may eventually replace imported oils as the former can be produced more cheaply. 1140

Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquiries to the original source of the article. Write to National Can Corporation, 110 East 42nd Street, New York City. Please mention the number at end of article — also name of the magazine you saw it in.

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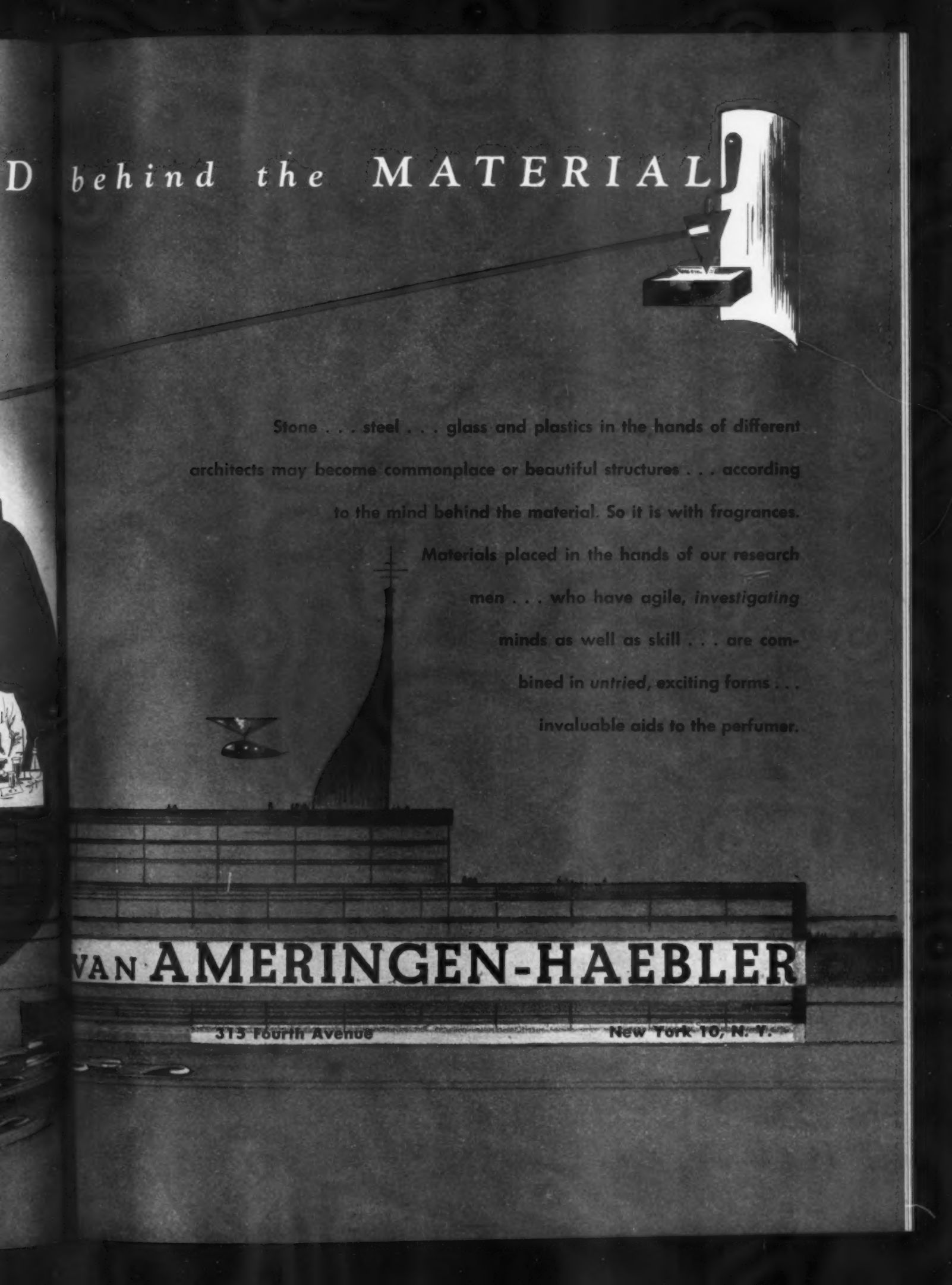
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Stone . . . steel . . . glass and plastics in the hands of different architects may become commonplace or beautiful structures . . . according to the mind behind the material. So it is with fragrances. Materials placed in the hands of our research men . . . who have agile, investigating minds as well as skill . . . are combined in untried, exciting forms . . . invaluable aids to the perfumer.
VAN AMERINGEN-HAEBLER
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Rosaria

REPLACES NATURAL ROSE ABSOLUTE

You'll find all the fresh, appealing scent of the natural rose in our new Rosaria. This fine new synthetic, perfected in our research laboratories, can be used to completely replace Rose Absolute or to stretch your stocks of the natural product. Order a *trial quantity* or send for working samples. A 24 hour blotter test will quickly convince you that Rosaria is a product you cannot afford to overlook. Write us today!

Aromatic Products, Inc.

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What's NEW at NYQ

ARMY SERVICE FORCES
OFFICE OF THE COMMANDING GENERAL
WASHINGTON 25, D. C.

7 September 1945

Mr. Irving McKesson, President
New York Quinine & Chemical Works, Incorporated
99-117 North 11th Street
Brooklyn, New York

My dear Mr. McKesson:

Your company has played a very important part in producing the equipment and supplies which have been such a decisive factor in winning the war. You and your associates and employees must have a deep sense of satisfaction as you look back upon your accomplishments on the war production front.

Now that the war is won, I want to express to you the gratitude and appreciation of the Army Service Forces for the magnificent achievements of your organization.

The energy, initiative, and efficiency which industrial concerns like yours have demonstrated in the war effort give me complete confidence that the problems of transition to normal peacetime production will be met with the same effectiveness as those of war time and will be as swiftly and as successfully solved.

With all good wishes for the future, I remain

Very sincerely yours

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English Distilled Oils

Stafford Allen & Sons Ltd.,
LONDON, ENGLAND

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for the

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English Distilled Oils

Stafford Allen & Sons Ltd.,
LONDON, ENGLAND

CLOVE
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schimmel

basic perfume specialties
and
custom compounds
for the
cosmetic and soap maker

Schimmel & Co., Inc.

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BOBBY JONES

KNEW THE IMPORTANCE OF

CONTROL

A "putt" that is a fraction of an inch off is frequently the margin of difference between the winner and tne runner-up. That is why Bobby Jones was such a great golfer—his superb *control* often enabled him to put the ball exactly where he wanted it.

In the pharmaceutical laboratory, even more than on the golf links, control is of the utmost importance. There is only one way to produce pharmaceuticals of unsurpassed quality—and that is by maintaining nothing less than the highest standards of laboratory control.

When you entrust your production of private formula brands to Strong Cobb & Co., our rigid laboratory control in each step of the manufacturing process is your assurance that the finished product will meet your most exacting requirements.

Whether you are considering immediate or future production, our technical sales director will be glad to talk over your manufacturing problems with you.

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SUBSIDIARY OF STANDARD BRANDS INCORPORATED

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ENJOY THE ADDED PROTECTION

OF LOW-FREEZING

PROPYLENE GLYCOL!

Dow Propylene Glycol, n.f.

Does cold-weather shipping or storage endanger your product? Do delays in transit worry you? Your product may need the added protection of Dow Propylene Glycol, N. F. Used in the proper proportions, this low-cost ingredient lowers the freezing point . . . facilitates wintertime shipping of many water-containing foods, beverages and pharmaceuticals.

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Here's an ingredient you'll want to be better acquainted with! Write today for Dow's free booklet on Propylene Glycol.

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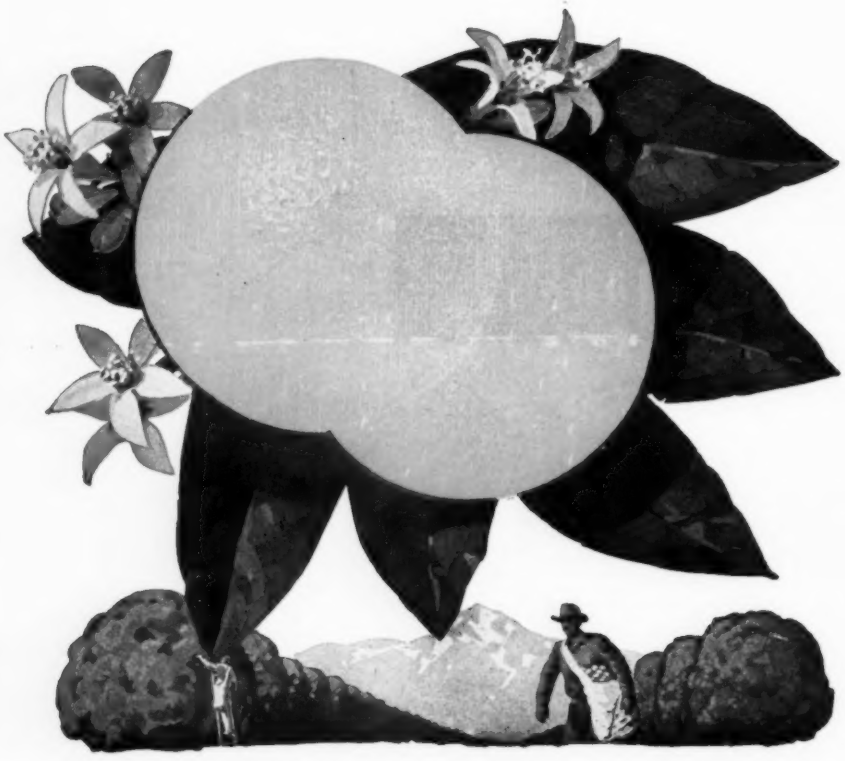

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First in America for Orange Flavor

Give it all your tests for *quality*, *uniformity*, and *strength*. The results speak for themselves! You'll find Exchange Oil of Orange puts more *real orange flavor* in your products than any other orange oil.

Because it's made only of fruit from the "Sunkist" groves of California... in the largest orange products plant in the world... accepted and reordered by men and women who know orange flavor.

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Looking for a fixative that's readily soluble? Du Pont announces a new product, Orangeol N—a fixative that's long lasting, almost completely soluble in 95% perfume alcohol; easily soluble, too, in aqueous alcoholic dilutions. It's a liquid fixative with a yellow tinge and mild, sweet, orange flower odor—just right for orientals, fougeres, chypres, the floral bouquets, and excellent for colognes.

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If you use bulk vitamins in the making of any pharmaceutical product, you know the importance of having a source of material of quality and potency beyond question.

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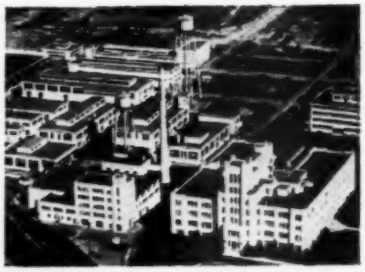
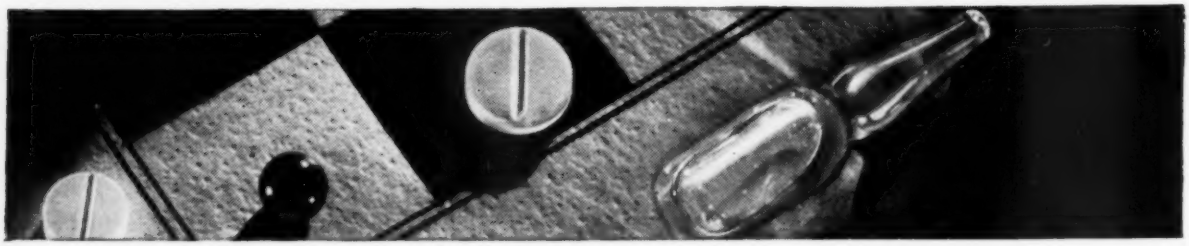
That is why your best manufacturing move is to specify vitamins 'Roche'—for thiamine hydrochloride, riboflavin, ascorbic acid, pyridoxine hydrochloride, alpha-tocopherol acetate, nicotinic acid, nicotinamide, calcium pantothenate.



HOFFMANN-LA ROCHE, INC.
Vitamin Division, Nutley 10, N. J.



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Shortages of materials, at home and abroad, bring problems throughout the trade.

Particularly in perfume compositions, manufacturers and perfumers are often in extreme difficulties. It has been our privilege to render helpful creative service in many critical perfumery problems—

With surprisingly helpful results—due to our long established world-wide contacts and broad laboratory facilities.

This service is yours—upon request.

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De nuevo podemos reanudar nuestras muy agradables relaciones comerciales con nuestros amigos del hemisferio meridional.

Los procedimientos norteamericanos relacionados con cosméticos han sido muy perfeccionados durante la guerra.

En nuestras dos fábricas, dotadas de la maquinaria más moderna y perfecta, fabricamos cosméticos de calidad superior, en todas las clasificaciones, a granel y envasados.

Ahora podemos despachar cremas, polvos, lociones, barritas para pintarse los labios, colorete, preparados para los ojos, y otras especialidades en cosméticos.

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YES, SIR

Our two factories with fine modern equipment, are producing cosmetics of superior quality in every classification, in bulk and packaged.

We can now handle your order or manufacture to your specifications creams, powders, lotions, lipsticks, rouge, eye preparations, perfume, cologne and other specialties.

Our new emollient lipstick is well worth an investigation.

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For nearly a century and a half D & O has created Perfume Classics that have established new and superior standards of quality and originality.

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The skill and ingenuity of master perfumers...the vast reservoir of experience and the comprehensive facilities of D & O are yours...for the solution of your perfume problems.

D&O

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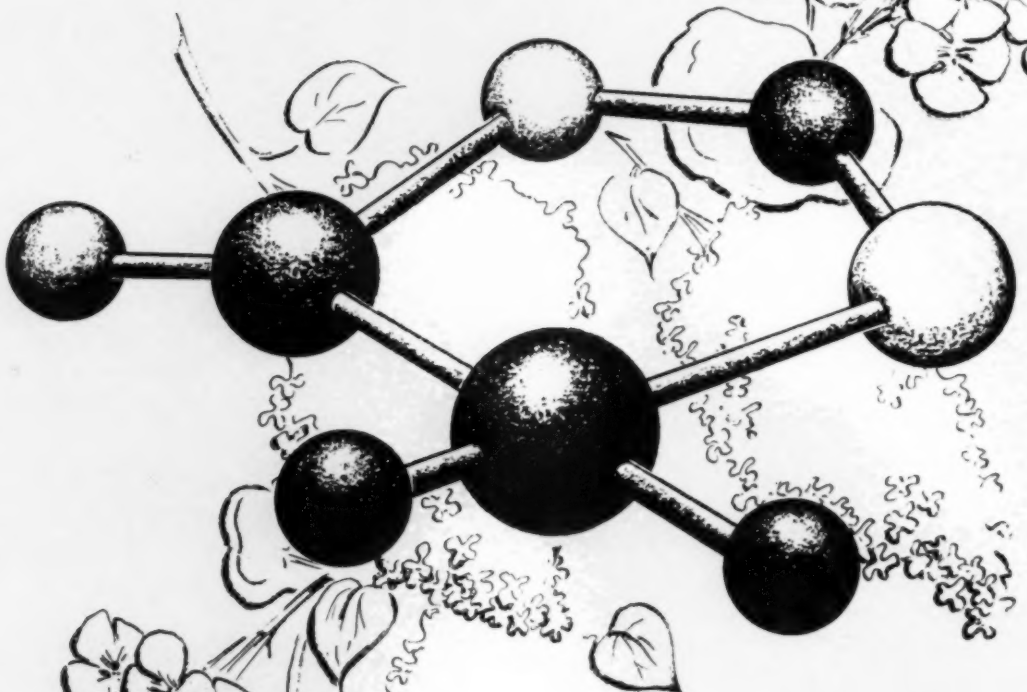
Boston • Chicago • Philadelphia • St. Louis • Los Angeles

Plant and Laboratories, Bayonne, N. J.

New Plans...New Importance f



ce for Artificial Essential Oils

Have you investigated the full possibilities that Givaudan artificial essential oils offer as substitutes for the natural products? They are the foundations on which many alert perfumers have built and are building products with a quality appeal. As many perfumers have discovered during years of natural essential oil scarcity, artificial essential oils are economical... practical... and versatile for a great variety of purposes, offering uniformity of quality and stability of price. Years of painstaking research on the part of Givaudan's chemists and perfumers, enable us to offer you experienced counsel in their use.

We invite your inquiries regarding, among others...

BERGAMOT ARTIFICIAL
CINNAMON CEYLON ART. AA
GERANIUM ARTIFICIAL
LAVENDER ARTIFICIAL
OIL ORRIS CONCRETE ART. 2A
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VETACETAL
VETIVERT ART. AA
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OAK MOSS ARTIFICIAL
ROSIS (Rose Artificial)

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Givaudan-Delawanna INC.

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Whole Leaves
Granulated, Powdered
Cut and Sifted
Extracts-Solid, Powdered

Digitalis
Whole Leaf
Granulated, Powdered

DIGITALIS GLYCOSIDES
Digitonin
Digitoxine
Digitalin N. N. R.

Senna T.V.
Whole Leaf
Cut and Sifted, Granulated,
Powdered
Extracts-Solid, Powdered
Senna Leaves, Alexandria
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Siftings

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Whole Root
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Podophyllin N.F.

Orris Root
Whole, Granulated, Powd.
Cut and Sifted, Pinhead
Oil Orris
Orris Concrete
Orris Resin

Due to space limitations, the plants illustrated here are not shown in relative sizes.

For the manufacturing and wholesale trades only

Your inquiries and orders are invited

S. B. PENICK & COMPANY

50 Church Street, New York 7, N. Y. • Telephone: COrtlandt 7-1970

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PERFUME VALUE

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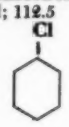
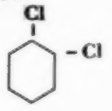
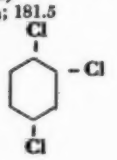
FRANCE: PLACE VENDOME, 8, PARIS
ST. PAUL: 253 E. 4TH STREET
HAVANA, CUBA: AMARGURA 160
CANADA: 119 ADELAIDE ST., W. TORONTO
135 COMMISSIONERS ST., WEST, MONTREAL
ENGLAND: 17 CREECHURCH LANE, LEADENHALL ST., LONDON, E. C. 3

Hooker Combines Chlorine and Benzene to give you these Benzene Derivatives

Listed below are some of the chemicals resulting from our experience in chlorinating benzene.

The properties and characteristics of these compounds are so varied that they are serving industry in many different ways. Some of these uses are indicated. These uses plus the structural formulas may suggest other possible uses to you.

Data sheets giving more information and samples of these Chemicals are available when requested on your letterhead. Our Technical Staff is also at your service in helping you evaluate Hooker Chemicals for your specific needs.

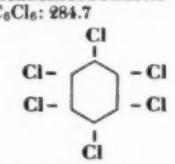
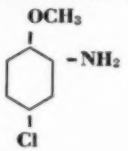
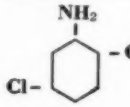
PRODUCT *Chemical Formula* *Molecular Weight*	DESCRIPTION & USE
Monochlorbenzene C_6H_5Cl; 112.5 	Clear, colorless liquid. Boiling Range 131.3° to 132.3°C. Manufacture picric acid, phenol, dinitro chlorbenzene, intermediates for a variety of synthetic chemicals, sulfur black and brown dyes and other dyes, synthetic perfumes, pharmaceuticals; insecticides; solvent for removing paint and tars.
Orthodichlorbenzene (Tech) $C_6H_4Cl_2$; 147 	Clear, colorless liquid. Boiling Range 6° including 179°C. Manufacture pyrocatechin, dye intermediates, other synthetic organic chemicals; degreasing metals; removing road tar from automobiles; ingredient metal polishes, paint and varnish removers; insecticide for termites, powder post beetles, sewage treatment.
Paradichlorbenzene $C_6H_4Cl_2$; 147 	White crystalline solid in 7 sizes. Insecticide for clothes moths and peach tree borers; deodorant; fungicide for tobacco blue mold and cranberry bog root grub. Manufacture of dye intermediates and other synthetic chemicals.
Trichlorbenzene 1:2:4 (Tech) $C_6H_3Cl_3$; 181.5 	Clear, colorless mobile liquid. Boiling Range 205° to 235°C. Manufacture dye intermediates and other organic chemicals, ingredient non-flammable electrical transformer fluids; as heat transfer medium; solvent for fats, oils, waxes, resins, for degreasing metals; insecticide especially as soil poison for termites.

HOOKER RESEARCH *Presents*
LAURYL CHLORIDE

$C_{12\text{-}6}H_{26\text{-}2}Cl$

Here is a new Hooker Chemical that is capturing the interest of chemists who are investigating its use as an intermediate in the production of esters, mercaptans, sulfides and detergents. Lauryl Chloride is a white to amber colored oily liquid having a faint, fatty odor. It is a distilled material being composed of a mixture of n-Alkyl Chlorides. It is insoluble in water and soluble in acetone, benzene, butanol, carbon tetrachloride and ethers. Crystallization Point is −19°C and boiling range is approximately 112° to 160°C. at 5 mm.

Lauryl Chloride is readily available in commercial quantities and samples will be supplied when requested on your letterhead. Technical Data Sheet 764 describes the physical properties of Lauryl Chloride and a copy is yours for the asking.

PRODUCT *Chemical Formula* *Molecular Weight*	DESCRIPTION & USE
Hexachlorbenzene C_6Cl_6; 284.7 	White to cream colored, odorless, crystalline solid. Melting Range 225° to 230°C. Ingredient of pyrotechnic flares, wire drawing compounds.
Chlor Anisidine $NH_2 \cdot C_6H_3 \cdot Cl \cdot OCH_3$; 157.5 	Gray crystalline solid, mixture of three isomers. Melting point 79°C min. Manufacture of dyes.
2:5 Dichlor Aniline $Cl_2C_6H_3NH_2$; 162.0 	Coarse brown crystals. Melting Range 48° to 49°C. Dye intermediate.

HOOKER ELECTROCHEMICAL COMPANY

13 Forty-seventh Street, Niagara Falls, N. Y.

New York, N. Y. Wilmington, Calif.

Tacoma, Wash.

ARMY E NAVY

HOOKER CHEMICALS

Caustic Soda **Muriatic Acid** **Sodium Sulfide**
Paradichlorbenzene **Chlorine** **Sodium Sulfhydrate**

8324

THIOVANIC ACID

VACUUM DISTILLED THIOGLYCOLIC ACID

SPECIFICATIONS

Assay $HS-CH_2-COOH$	• 80.0% min.
Dithiodiglycolic Acid	• 2.0% max.
Iron	• 0.0 ppm
Copper	• 0.0 ppm
Ash	• none
Color - A.P.H.A.	• 50 max.
Odor	• faint sulfidic

PHYSICAL PROPERTIES

(PURE COMPOUND)

Boiling Point	• 96° c/5mm
(Uncorrected)	• 108° c/15mm
Melting Point	- 16.5° c
Specific Gravity	• 1.325 @ 20°c
Dissociation Constant	• 2.1×10^{-4}
Normal Oxidation Potential	• 0.27 volts @ 25°c
Heat of Combustion	• 346.3 $K_g$cals/mole

SOLUBILITY

Miscible with Water, Alcohol, Acetone, Ether, Chloroform, Benzene

With two reactive functional groups, this Mercapto Acid offers interesting possibilities as an intermediate in the synthesis of a variety of products. Apart from its use in Permanent Waving of hair and in Depilating compositions, Thiovanic Acid has many possibilities in Bacteriology, Rubber Reclaiming, Fermentation, Medicine, as an Analytical Reagent, etc., etc.

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CALCO offers you uniform quality in bulk pharmaceuticals

If you're looking for dependable bulk pharmaceuticals . . . pharmaceuticals of standard quality that never varies . . . we suggest you turn to CALCO.

CALCO'S large-capacity plants not only bring you this standard quality, but they provide you a volume supply to take complete care of your present and future needs.

And, as an assurance of this quality . . . and its uniformity . . . you should know this:—

Night and day, without ceasing, a rigid and unremitting inspection system watches over CALCO quality . . . keeps it ever to required standards . . . through every step from laboratory through to big-scale output.

Check over the fine CALCO bulk pharmaceuticals listed on this page. Then let CALCO know your requirements promptly.

- **Precise and complete analytical control.**
- **Technical bulletins available.**
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(and Sodium Salt)
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(and Sodium Salt)

Sulfathiazole U.S.P.
(and Sodium Salt)
. . . . available in powder or 30/80 mesh and micro crystals.

Sulfapyridine U.S.P.
(and Sodium Salt)

Sulfanilamide U.S.P.
. . . available in powder or 30/80 mesh crystals

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Phenothiazine N.F.
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ARMY E NAVY

Pharmaceutical Department
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Unsurpassed in purity, clarity, and freedom from any foreign odor—even after prolonged aging—Rossville Hexagon Cologne Spirits develop and preserve the most delicate fragrance of the finest perfumes. It is acknowledged by users of fine alcohols as *the* product of supreme quality.

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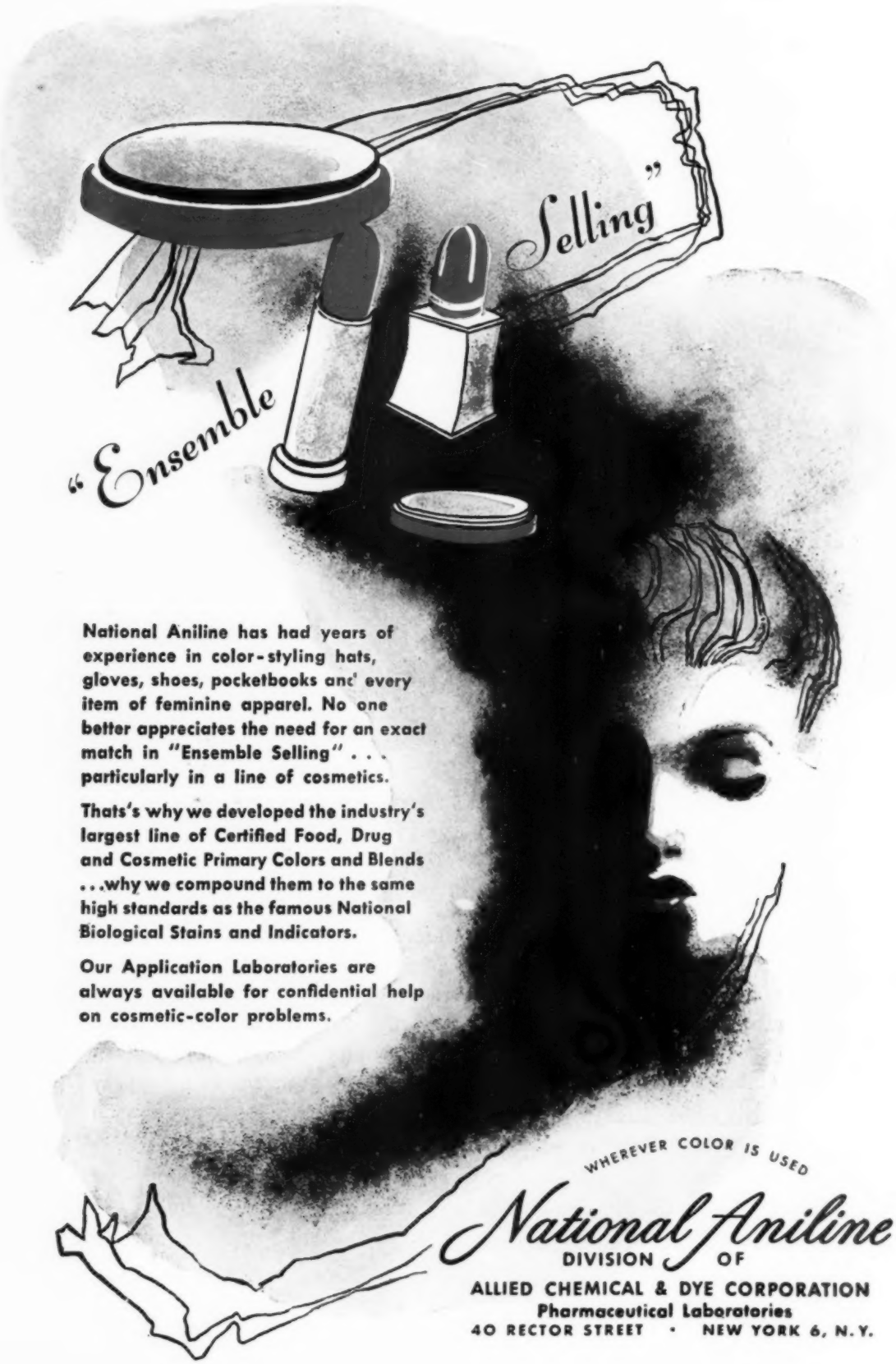

National Aniline has had years of experience in color-styling hats, gloves, shoes, pocketbooks and every item of feminine apparel. No one better appreciates the need for an exact match in "Ensemble Selling" . . . particularly in a line of cosmetics.

Thats's why we developed the industry's largest line of Certified Food, Drug and Cosmetic Primary Colors and Blends . . .why we compound them to the same high standards as the famous National Biological Stains and Indicators.

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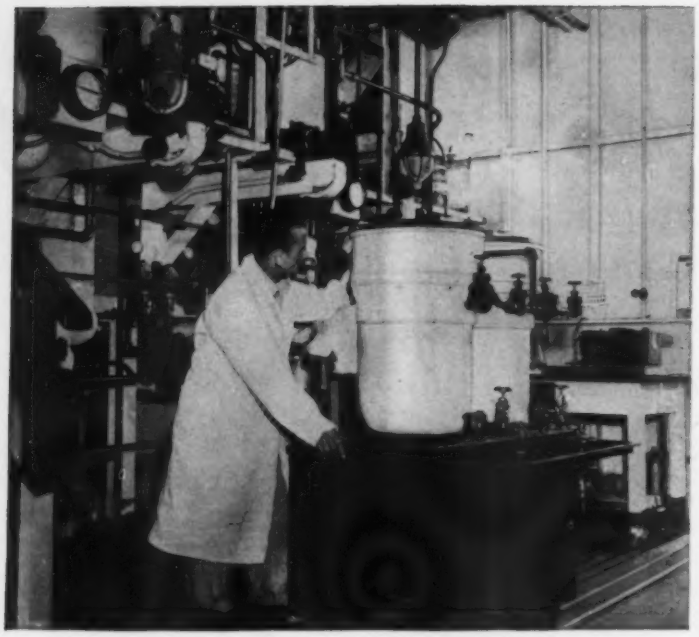

Final stage in the purification of penicillin—the removal of pyrogens by filtration of the penicillin concentrate.

Penicillin Merck meets the recognized high standard of quality established for all Merck products. It is subjected to repeated tests and control procedures throughout every step of the production process, and the finished product is assayed, tested, and approved under rigid standards established by the Food and Drug Administration and by the Merck Analytical Laboratories.

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A GLIMPSE AT THE RECORD

IN 1940 Merck research on antibiotics concentrated on Penicillin.

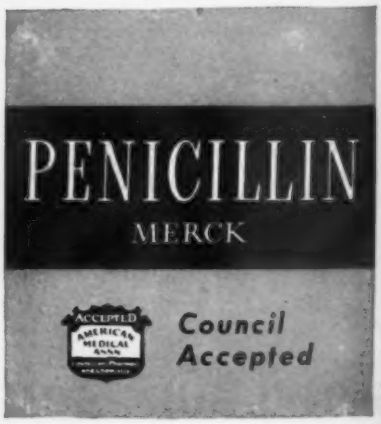
IN 1941 Merck brought about a reciprocal arrangement between British and American investigators to spur the production of Penicillin in co-operation with the United States and British governments.

IN 1942 Merck supplied Penicillin for the first case of bacteriemia successfully treated with this drug in the United States.

IN 1943 Merck sent shipments of Penicillin to England by air transport for urgent therapeutic use by the United States Army Medical Corps.

IN 1944 Merck was sending ever-increasing supplies of Penicillin to our Armed Forces.

AND NOW in 1945, Merck production of Penicillin has reached a point where, in addition to meeting military requirements, large quantities are being produced for civilian medical needs.



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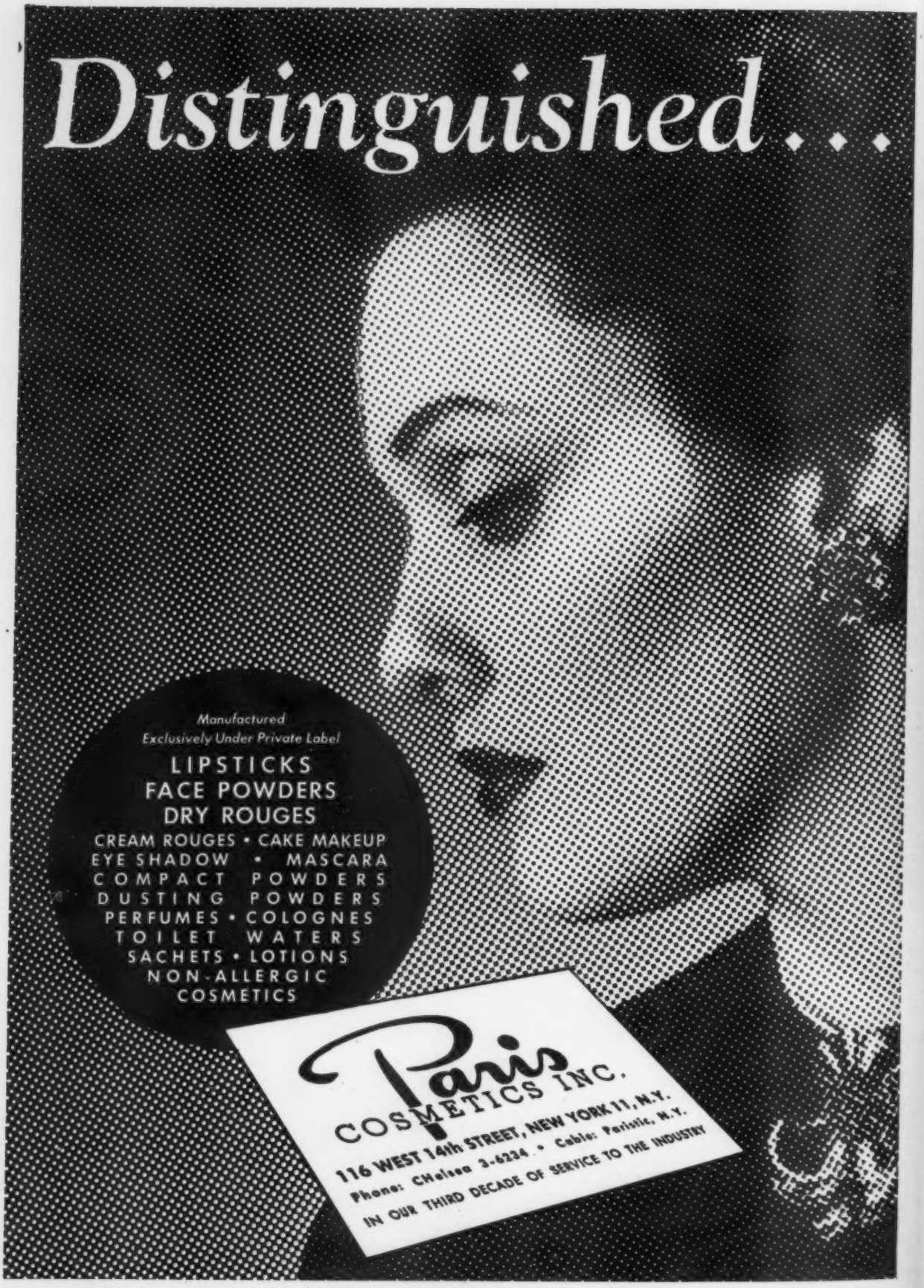
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BEAUTY PROGRESS

An example of early cosmetic advertising... this tile sign that hung outside an American Apothecary Shop, probably about 1870.

BEHIND locked doors, the glamour girls of another day experimented with strange concoctions of milk, vinegar and the juice of the pear to whiten their skins . . . because cosmetics were frowned upon by the Pilgrim fathers! Even the threat of "being brought up in meeting" could not stifle woman's natural urge to beautify herself.

Today's woman has science to help her in her search for beauty. Modern cosmetics are not blended by a formula based on wishful thinking, but on scientific laboratory research. She is protected by laws, not *forbidding* the use of a cosmetic, but *insuring* that its ingredients are harmless, even that they are as beneficial as they claim to be.

The cosmetics of the future afford infinite possibilities of improvement as research, speeded by wartime necessity, has opened new vistas to us. When production restrictions are lifted, new formulas, new materials, will be available for civilian production and we at Allied will be prepared to adapt them to the improvement of YOUR product.

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MM&R Flavor Oils add good taste; *flavor everything from tooth paste to lipsticks.* MM&R Perfume Oils provide odor personality to a host of products, while MM&R Deodorants neutralize the undesirable odors of many basic ingredients.

MM&R can be of service to you in solving, perfuming and flavoring problems for products of today . . . *and tomorrow!*

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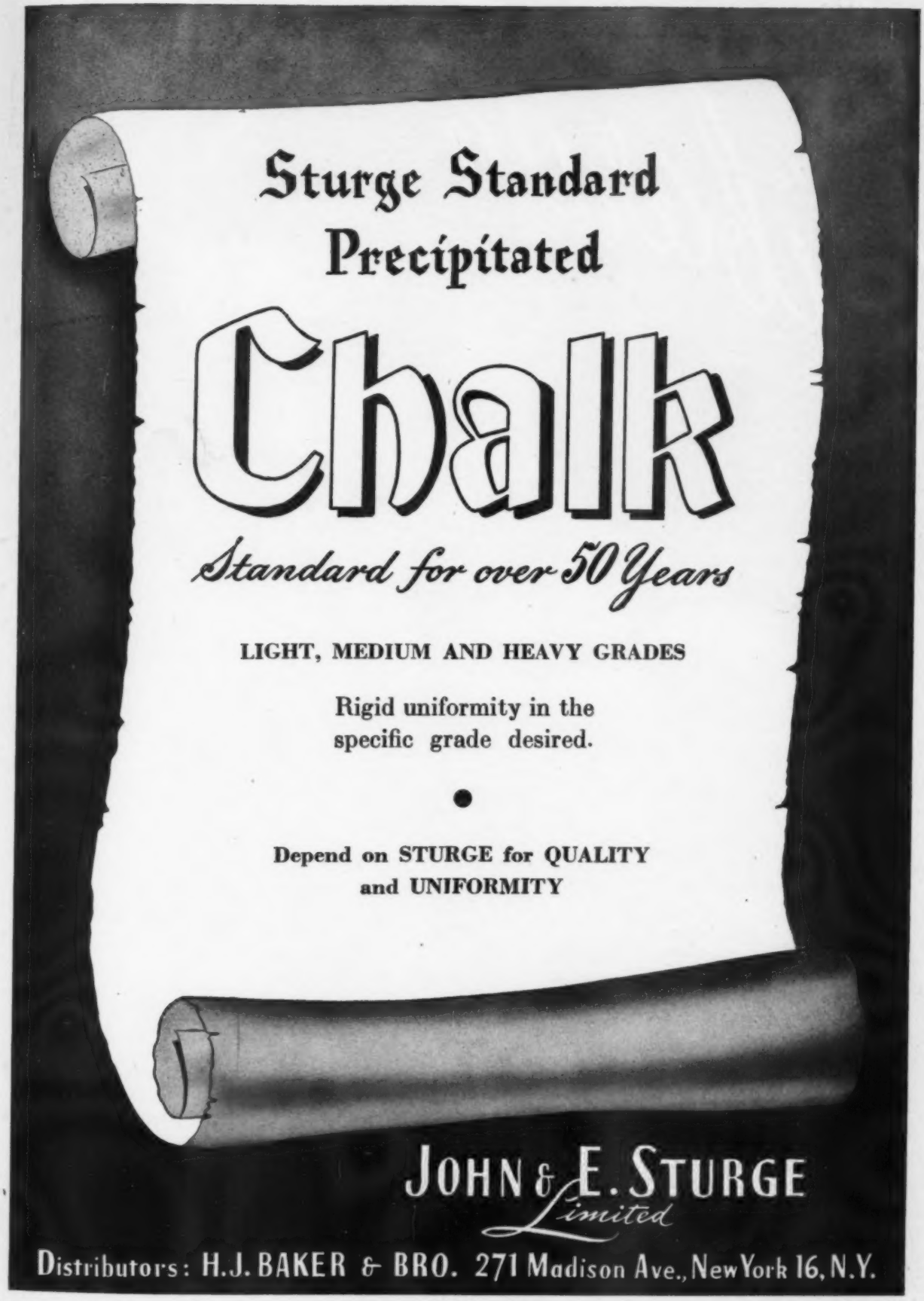
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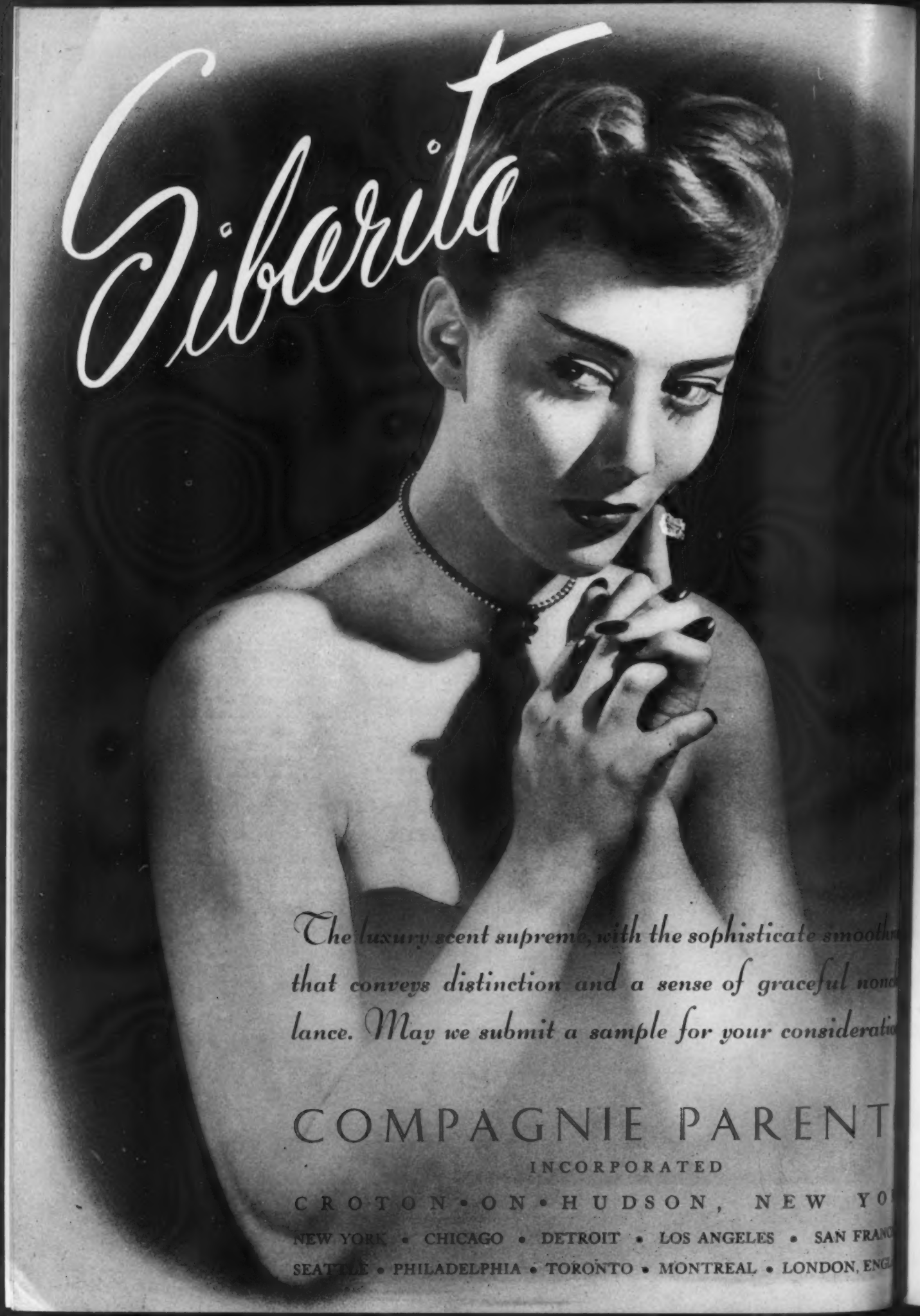
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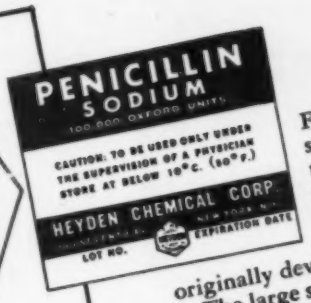
A Symbol of Meritorious Achievement



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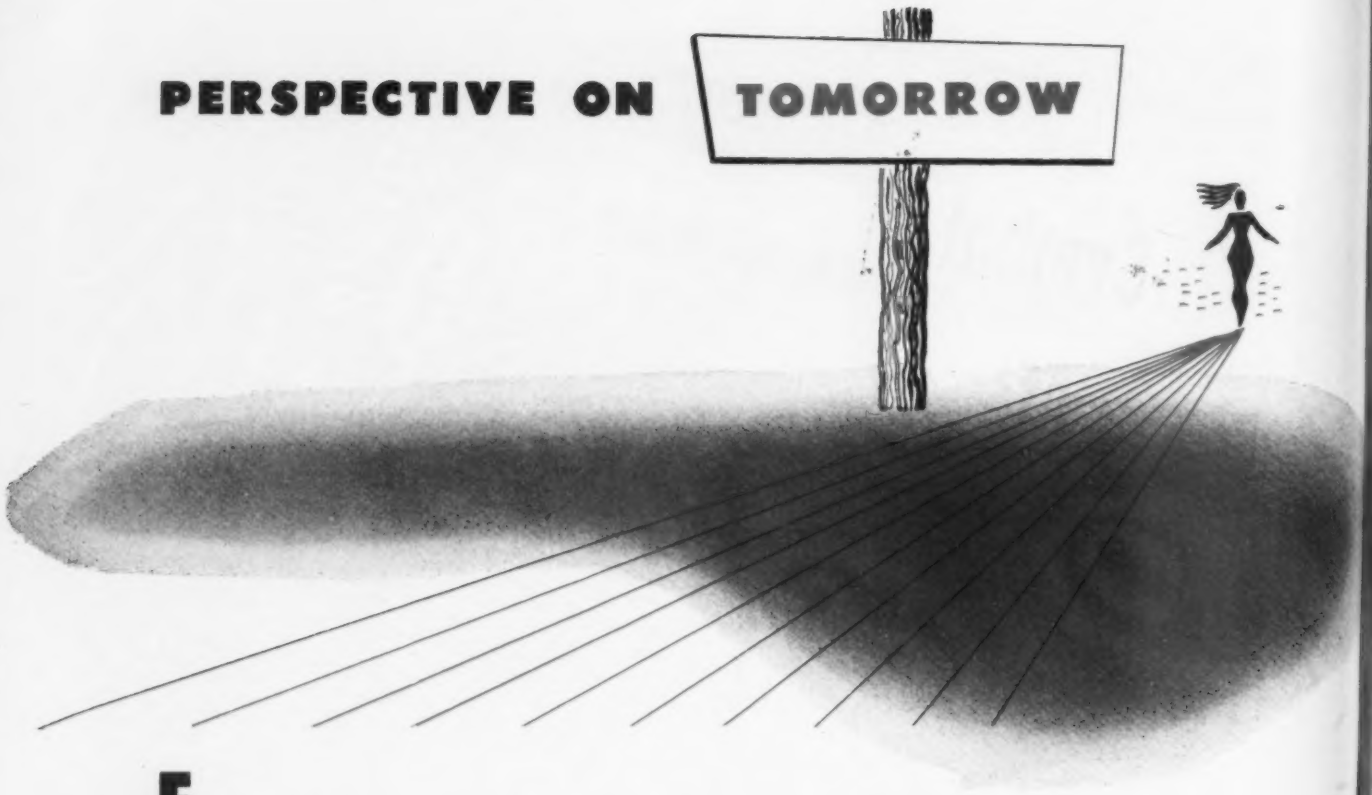

From whichever perspective you view your markets for **FINEST PERFUMES and COSMETICS**, all lines lead to a single objective. Tomorrow . . . the next day . . . every day following, the pulse of your business will be the satisfying appeal and the constant acceptance of your products. Your confidence in accomplishing this is as strong as your Source of Supply in ***MATERIALS*** and in *research.**

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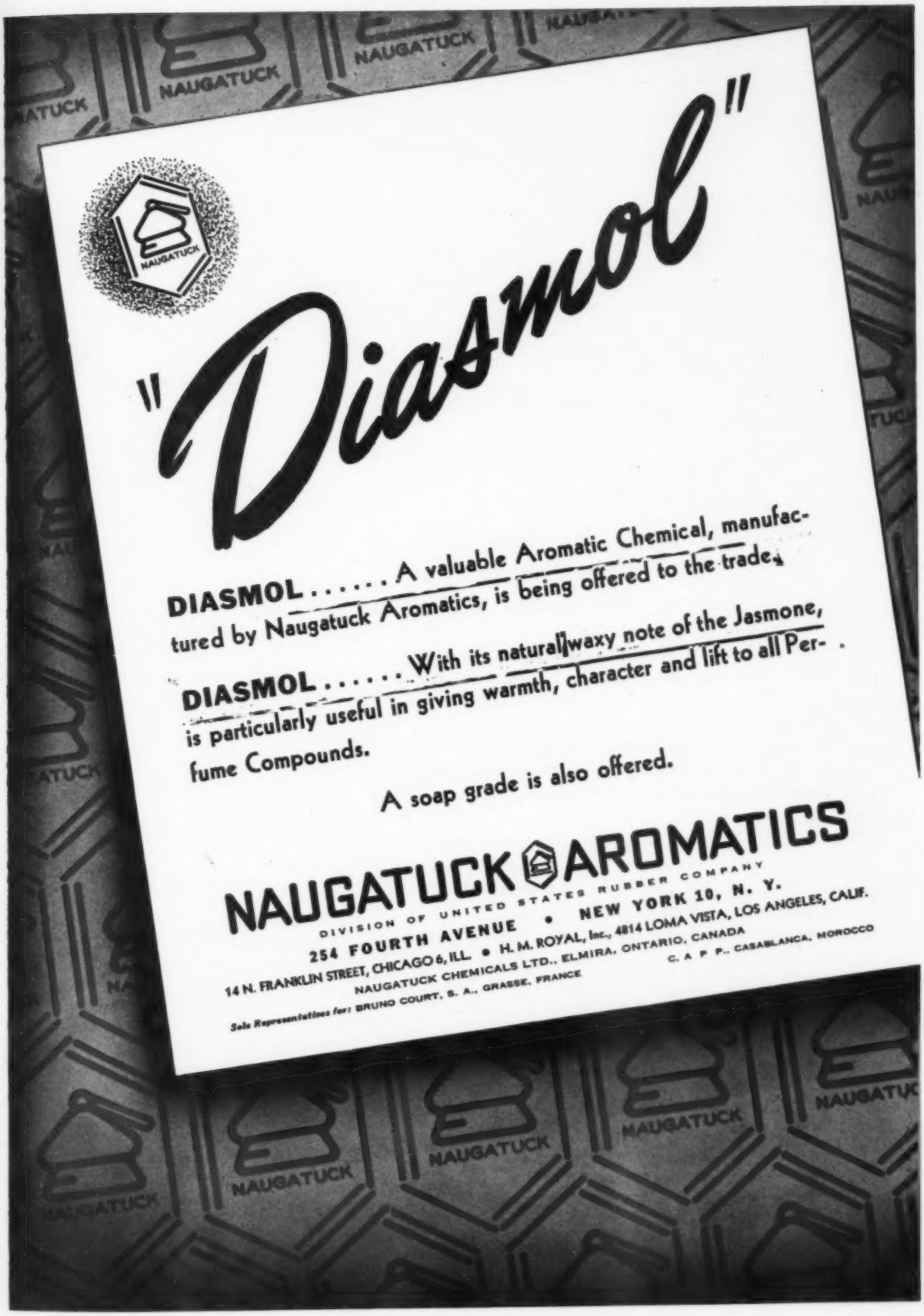
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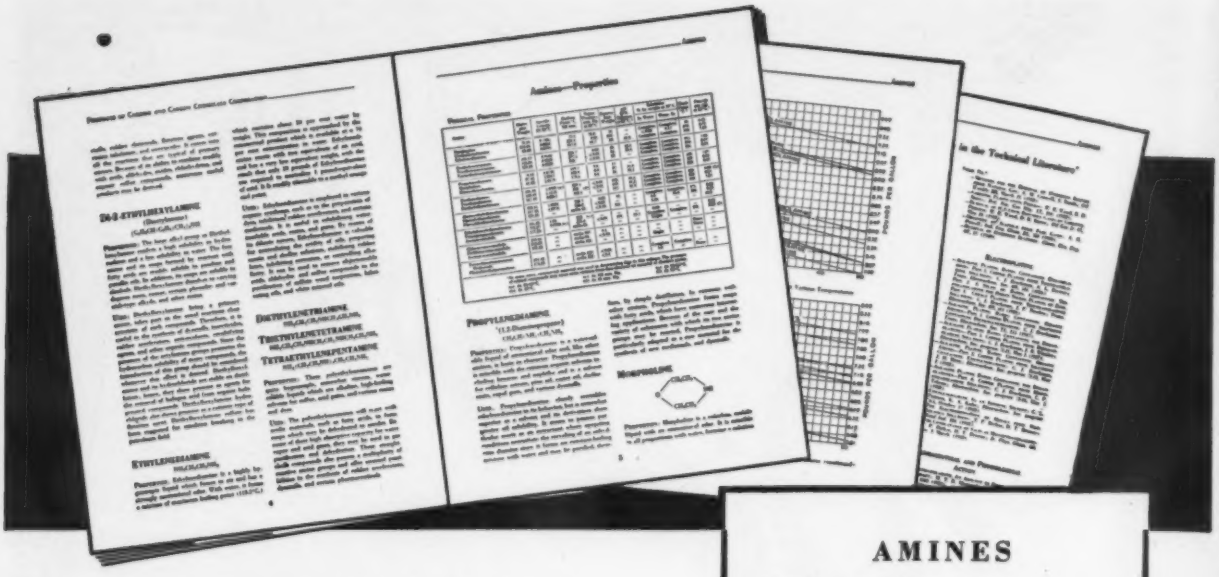

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You can have a copy of the booklet, "Amines," by writing for it. There is no obligation. Similar booklets are available on "Glycols," "Organic Acids," and "Columbia Activated Carbon." We will be glad to send you a copy of whichever ones you need.

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Diethylenetriamine
Triethylenetetramine
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Monoethanolamine
Diethanolamine
Triethanolamine
Methyldiethanolamine
Dimethylethanolamine
Diethylethanolamine
Aminoethylethanolamine
Phenylethanolamine
Phenyldiethanolamine
Ethylphenylethanolamine
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Diethylhexylamine

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Dichloracetoacetanilide
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These patents are owned exclusively by *Max Factor & Co.,* and due notice is hereby given that *Max Factor & Co.* expects fully to protect its rights in every way possible against any illegal infringements.

In addition to these patents, the name "PAN-CAKE" is a registered trade-mark, registered in the United States Patent Office (No. 350,402) on September 28, 1937, for cosmetics and related products.

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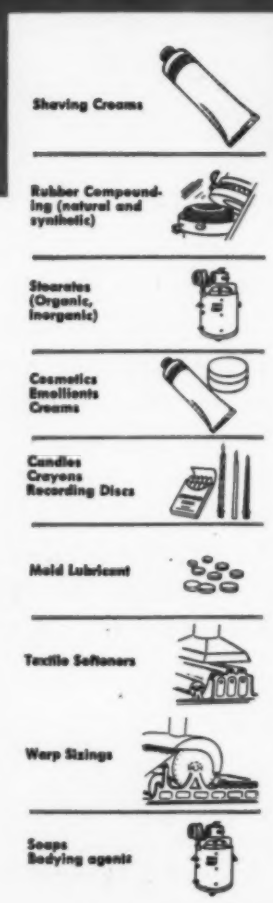

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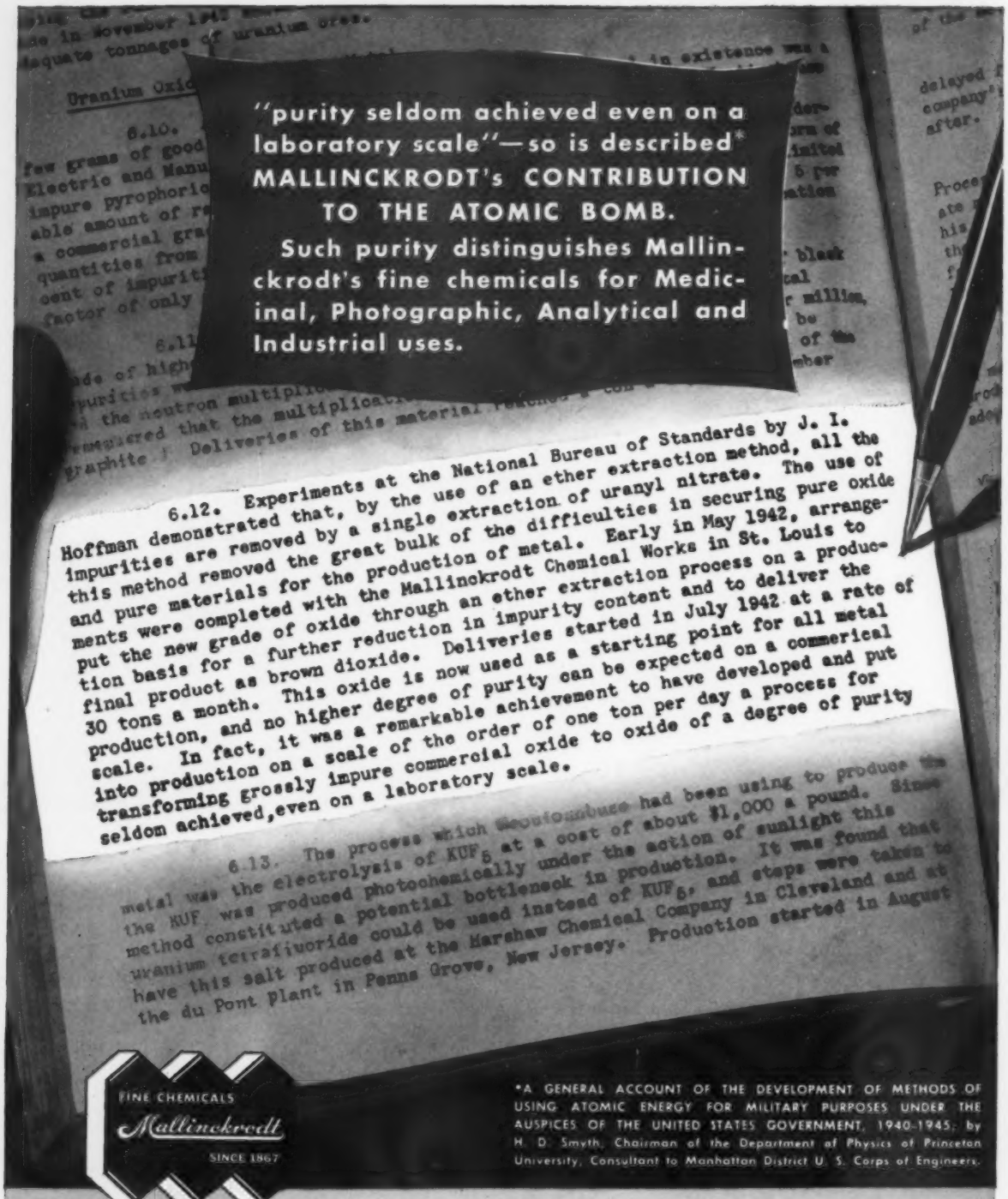
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Such purity distinguishes Mallinckrodt's fine chemicals for Medicinal, Photographic, Analytical and Industrial uses.
6.12. Experiments at the National Bureau of Standards by J. I. Hoffman demonstrated that, by the use of an ether extraction method, all the impurities are removed by a single extraction of uranyl nitrate. The use of this method removed the great bulk of the difficulties in securing pure oxide and pure materials for the production of metal. Early in May 1942, arrangements were completed with the Mallinckrodt Chemical Works in St. Louis to put the new grade of oxide through an ether extraction process on a production basis for a further reduction in impurity content and to deliver the final product as brown dioxide. Deliveries started in July 1942 at a rate of 30 tons a month. This oxide is now used as a starting point for all metal production, and no higher degree of purity can be expected on a commerical scale. In fact, it was a remarkable achievement to have developed and put into production on a scale of the order of one ton per day a process for transforming grossly impure commercial oxide to oxide of a degree of purity seldom achieved, even on a laboratory scale.
6.13. The process which Westinghouse had been using to produce the metal was the electrolysis of KUF_5 at a cost of about $1,000 a pound. Since the KUF was produced photochemically under the action of sunlight this method constituted a potential bottleneck in production. It was found that uranium tetrafluoride could be used instead of KUF_5, and steps were taken to have this salt produced at the Harshaw Chemical Company in Cleveland and at the du Pont Plant in Penns Grove, New Jersey. Production started in August

FINE CHEMICALS
Mallinckrodt
SINCE 1867

*A GENERAL ACCOUNT OF THE DEVELOPMENT OF METHODS OF USING ATOMIC ENERGY FOR MILITARY PURPOSES UNDER THE AUSPICES OF THE UNITED STATES GOVERNMENT, 1940-1945, by H. D. Smyth, Chairman of the Department of Physics of Princeton University, Consultant to Manhattan District U. S. Corps of Engineers.

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KEEPING POSTED

Labor Situation Acute

THE labor situation is moving rapidly forward as far as the unions are concerned, but there seems to be little doubt that it will be pushed to the point at which some action will be taken by Congress to restrain the unions or at least to impose responsibilities upon them. As an example of those things which bring about this situation we cite the case of the Beth Isreal Hospital of New York City. Here is a hospital that runs an annual deficit of a large number of thousands of dollars. It is not the largest or smallest hospital in New York, but apparently it was picked as the guinea pig for union action. The technicians, nurses, and other employees of the hospital are unionized and the union demands recognition from the hospital board of directors. The union is not asking for anything other than recognition at this time. In fact the hospital can write the contract terms so long as the union becomes the bargaining agency. Once the union is recognized as the bargaining agency, demands to change the conditions of the contract will ensue.

The officials of the hospital are adamant that the union will not be recognized. They see no excuse for permitting a labor union to be formed to include employees of a hospital—particularly one that performs large amounts of charity work each year and which, because of this runs a large annual deficit which is made up by contributions. The hospital officials decided that if a strike should come they would close down their clinic and accept in the hospital nothing but emergency patients. They are going to follow this plan until public reaction sets in and the hospital knows where it stands with public opinion in the situation. They do not want to be put in the position where at some future date demands will be made that cannot be met and many human lives will be placed in jeopardy because of a strike being called. The drug manufacturers as well as the medical profession and other interested parties should keep their eyes on this latest movement by the labor unions.

The difficulty in dealing with unions is that contracts mean practically nothing. This has just been illustrated recently right in our own industry. A large drug and chemical manufacturer who had been doing a great deal of war work went from a fifty-two hour week to a forty hour week on the cessation of hostilities. In order for an employee to get the same pay for a forty hour week as he received for a fifty-two hour week it is necessary to increase the hourly rate of pay by thirty per cent (30 per cent of 40 is 12, and 40 plus 12 is 52). The company did not feel that it could absorb such a sharp increase so it offered the union an increase of fifteen per cent. The union agreed and a contract on this basis was signed. Within a month the employees of the company struck.

Shortages and the Future

THE shortage of all sorts of goods continues. Manufacturers who have been relieved of Government restrictions on practically all of the things that they need, find that their suppliers cannot give them all that they need of many things. This is obvious. Heavy demand during the war was held in check by the quotas set on users by the War Production Board. Consequently stocks of manufacturers, wholesalers, and retailers were practically nil. When goods were made, they moved with surprising rapidity from the manufacturer, to the wholesaler, to the retailer, and finally to the consumer. Now manufacturers, wholesalers, and retailers are not only trying to acquire normal stocks, and their orders are placed accordingly, but a very heavy consumer demand continues to exert itself. Whether this consumer demand is abnormal and will recede shortly, or whether it is to be the normal demand in the post-war years due to more widespread employment and higher wages, is something that is being widely discussed. Perhaps the answer lies somewhere in between the two extremes.

However, manufacturers of raw materials and containers cannot, in all cases be expected to meet this demand instantly on all products. Glass containers have been extremely tight and some companies were reported as freezing orders as of last month until they could see some relief in sight. The strain is very heavy on the glass container people and they are continually under pressure from buyers who think that there should be no difficulty in obtaining containers now that the war is over, and that anyway they should be able to get all they want even if others cannot.

Naturally producers of supplies for this industry are not rushing to erect new plants to care for the present rate of demand unless they can be certain that this rate of demand can be considered normal for the post-war period. It must be remembered that a large part of the present shortage is not entirely due to shortage of production facilities but rather to lack of manpower and to strikes. For under the heavy schedule of orders under which all are working, a lack of labor due to a shortage of manpower or to strikes simply means that a certain amount of production has been skipped and that it cannot be replaced when demand is equal to or greater than the total possible production.

Strikes in plants producing phenol, salicylates, and many other products vital to this industry have long since been settled, but still the lack of production which they caused is still being felt not only by the producer whose plant was struck, but also by other manufacturers of these items who were called upon to shoulder an additional demand to relieve those who were short of these items because of the strike. A recent strike in the plant of a producer who manufactures penicillin among many other items, will add further to the tightness of penicillin supplies which were already in short supply before the strike occurred.

The period through which we are passing is one which requires patience and good humor on all sides. It is a tough struggle for sellers and buyers, but there is not much that can be done about it until conditions are restored to what we might consider more normal times.

Northam Warren Expanding

AN INCREASE of personnel of 55 per cent over pre-war levels just as soon as materials become fully available is anticipated by Northam Warren in his company. With the discontinuance of its war work division, which made electrical connectors for the Armed Forces, the company is now again engaged 100 per cent in the production of cosmetics at its plant in Stamford, Conn. At present the company is employing 15 per cent more persons than when the war began. The further increase to 55 per cent is anticipated about the first of the year as soon as a new product, not yet marketed, can be launched upon receipt of critical material not yet in free supply. Export orders are accumulating and are waiting for Government shipping releases and availability of ocean shipping space. The company manufactures in 28 foreign countries but also ships large amounts of export goods from this country.

Arden Loses Demonstrator Damage Case

REASON why the Robinson-Patman Act was enacted is clearly indicated in the decision of the U. S. Circuit Court for the Eighth Circuit which confirms the verdict of the District Court in allowing damages to a retailer of Elizabeth Arden goods because of demonstrator allowances. Two retailers in Little Rock, Ark., sold Elizabeth Arden goods in about the same volume. Arden allowed one of the retailers $10 per week which was half pay of a sales girl, while Arden allowed the other store the full pay of a girl, or $20 per week. After Arden has taken its agency away from the retailer getting the $10 allowance and given exclusive representation for the city to the other retailer, the first retailer sued Arden for triple damages under the Robinson-Patman Act. The damages claimed were $10 per week difference in demonstrator allowance for 101 weeks, or $1,010, which is tripled under the statute to a total of $3,030. The District Court ordered Arden to pay this amount, and the Circuit Court confirmed the decision.

As to the volume of Arden goods sold by the two stores, the Circuit Court said that it was not of revelance because "the allowance had been fixed in both instances at the time the purchase of goods began, and there it simply remained. Its amount was arrived at by personal negotiation and individual agreement. There was no arrangement or provision for graduating it to the amount of goods purchased during any given period. Nor was it based upon any other guiding factor, such as a difference in the character of the stores and the type of facilities afforded for handling appellant's (Arden's) products, if that could have been made to constitute a valid legal distinction." As a matter of fact the amount of goods sold by the two stores was quite close.

The decision states: "that appellant's (Arden's) whole policy was simply one of random and arbitrary arrangement was also made to appear from the varying customer allowances shown by its general records. . . . These records showed numerous instances of full allowances of clerk's services or clerk's salaries to customers in other cities throughout the country, whose purchases had been less in amount than those of the appellee. They showed different allowances to customers in the same city, whose purchases had been practically identical in amount with each other."

The decision stated further: "That which was discriminatory under the statute when done, because wholly unrelated to any proportionilized basis or standard, cannot subsequently, in order to enable the seller to escape damages for the discrimination, be artificially tailored into proportionately equal terms by fitting it to some imaginary basis or standard that has never in fact existed." And further:

"This unequal expense-burden which appellee would not have had to bear if there had been no discrimination was clearly a direct business-damage, and the multiplication of the damage, which the statute allows when there is a recovery, is in the nature of a penalty for having occasioned the injury."

Cough Drops Get More Sugar

FORTUNATELY for the manufacturers of cough drops, these products have been restored to the status of internal drug products and as such manufacturers may now obtain and use for their manufacture 110 per cent of the amount of sugar consumed during the base period of 1941. Because of the similarity of cough drops to some confections in the mind of the OPA, that body on July 1 transferred cough drops to the confection classification limiting them to sugar consumption of only 50 per cent of the base period. Now, when cough drops meet the requirements of the Food, Drug, and Cosmetic Act for products of their type, they are classified with internal drug products. The effective date of the change was November 5.

Canadian Vitamin Regulations

GOVERNMENT action taken in Canada with reference to vitamin products is interesting because it gives the ideas of how officials in Canada think these products should be dispensed. Some of the provisions of the new regulations are:

Recommended dosage of cod liver oil should not be more than two teaspoonfuls per day regardless of the age of the user.

In multiple vitamin preparations the daily intake of the various constituents according to the recommended dosage should not be more than 2,000 international units of vitamin A, 0.6 mg. of thiamine, 0.8 mg. of riboflavin, 10 mg. of nicotinic acid or nicotinic acid amide, 1 mg. of pyrodoxine, 5 mg. of pentothentic acid, 25 mg. of ascorbic acid, and 400 international units of vitamin D.

B-complex preparations must contain at least three of the following four factors in the specified amounts in the recommended daily dosage: 0.4 mg. of riboflavin, 2 mg. of nicotinic acid, 0.3 mg. of pyrodoxine, 0.6 mg. pantothenic acid.

When biotin or vitamin E are advertised as being present in a preparation, the amounts present must be given.

Vitamin K preparations must state the amount present and the equivalent in terms of menadione.

Products containing potencies in daily recommended dosage above certain limits must not be advertised for lay use but must be labeled "for therapeutic use only." These limits are: 10,000 international units of vitamin A, 3 mg. thiamine, 6 mg. riboflavin, 30 mg. of nicotinic acid or the amide, 100 mg. of ascorbic acid, 2,000 international units of vitamin D.

Vitamins should not be added to food to give more than the following quantities in reasonable daily consumption of the foods in question: 5,000 international units of vitamin A, 2 mg. of thiamine, 2 mg. of riboflavin, 20 mg. of nicotinic acid or the amide, 75 mg. of ascorbic acid, 800 international units of vitamin D.

General claims based upon the vitamin content of a food, dietary supplement, or drug shall be made only within the following limitations:

1. That vitamins are necessary for the normal functioning of the body.
2. That they aid in growth.
3. That they may help to maintain appetite.
4. That dietary insufficiency may lessen the resistance of the body to infection.

Specific claims based upon the vitamin content of a food, dietary supplement, or drug shall be made only within the following limitations:

1. For Vitamin A: that this vitamin is an essential for the maintenance of a healthy condition of the epithelium; that it is specific in the prevention and treatment of nutritional night blindness, or nyctalopia, of dietary origin; that it prevents, or relieves if not too far advanced, xerophthalmia due to Vitamin A deficiency;

2. For Vitamin B_1; that this vitamin prevents or alleviates beriberi; that it protects against and aids in the treatment of neuritis due to Vitamin B_1 deficiency; that the need of the organism for Vitamin B_1 is increased when metabolism is greatly augmented as it may be in pregnancy, fever, hyperthyroidism and infectious diseases;

3. For Riboflavin: that this vitamin is specific for the prevention and treatment of ariboflavinosis of dietary origin;

4. For Nicotinic Acid: that this vitamin is of value in the prevention and treatment of pellagra;

5. For Vitamin B Complex: that the combined action of the factors of the Vitamin B Complex aids in the utilization of foodstuffa, and its use is to be preferred to that of mixtures of the same amounts of the known factors of the Complex;

6. For Vitamin C: that this vitamin is specific in the prevention and treatment of scurvy; that it is a factor in the normal development and maintenance of the bones and cartilages, the teeth and gums; that the need of the organism for Vitamin C is increased in fever;

7. For Vitamin D: that this vitamin is an essential in the prevention of rickets and in the normal development of bones and teeth; that the requirement for Vitamin D is greatest in infancy and childhood, and during pregnancy and lactation.

Penicillin Supplies Tight

PENICILLIN supplies are very tight. All producers have more orders than they can fill and export orders keep flowing in. The price remains relatively stable at 60 cents per hundred thousand units. The Government is selling the plants which it owns for the manufacture of penicillin, but it is expected that the manufacturers who have been operating them will bit sufficiently high to get them. Practically all of the producers of penicillin are anxious to remain in the field and should some of them not be the successful bidders for the plants which they operate, they are likely to immediately erect new plants with their own money. In other words, many manufacturers who would not risk their own money when the manufacture and efficacy of penicillin were a gamble, are now sufficiently assured of the future of the product to put their own money into a plant to stay in the field.

German Drugs in the War

OTHER interesting facts revealed by the report on the pharmaceutical activities of the German I. G. include the following statement regarding blood plasma:

"The production of sufficient blood plasma for the use of the German Army was not possible, due to the low nutritional state of the German population." A substitute was developed that will not have a large post-war usefulness.

In the study of tropical diseases no effective compounds have been found in filariasis. In schistosomiasis several of the antimonials show considerable promise. A metal-free compound called Miracil is also promising in this disease. For leishmaniasis, solustibosan is said to be the drug of choice.

Germany had all the sulfa drugs that we had, and in addition they had Marfinil, Tibatin, and Badional (sulfathiourea). Marfanil was used in large amounts by the German Army, but American results with it do not bear out the German claims of activity *in vivo*. It is active *in vitro* and is not antagonized by *p*-aminobenzoic acid. Tibatin is especially active in pneumonia and is relatively non-toxic when administered intravenously. Badional is claimed to be effective in bronchopneumonia and is used by inhalation therapy.

Medical Plan Extended to Dependents

IT IS INTERESTING to note that Abbott Laboratories have extended the benefits of its medical expense insurance plan to the dependents of its employees. In March of this year Abbott presented to its employees this plan. It has proved so popular that now it is being extended to dependents. Maximum benefits under the plan cover 50 visits per year, per dependent, regardless of the number of children under 18, by a physician of the employee's choice to the home, or by the patient to the doctor's office. Two dollars are allowed for each office call and three dollars for each home call. Laboratory fees up to $25 are allowed for tests such as electrocardiogram, urine and blood examinations, X-ray diagnostic tests for chest, kidney, and bladder, as well as for other tests which the doctor may order. This plan is underwritten by the Equitable Life Assurance Society.

Amino Acids for Ulcer Control

PROTEIN hydrolysates—products of the amino acid group—are now being used successfully to treat and control peptic ulcers. These products are protein substances obtained from milk, packing house products, other sources, being digested by alkalis. They have been widely used in severe cases of malnutrition, extensive burns, and to shorten the period of surgical convalescence. In the treatment of ulcer, about one pound of hydrolysates per day is given over a period of two to three weeks. According to Dr. Co Tui, "The prompt control of recurrent symptoms by feedings with the mixture suggests that this treatment may prove to be a satisfactory ambulatory treatment even in cases of severe ulcer. This is now being put to a test in the out-patient clinic."

The reasons for the efficacy of this treatment are said to be two in number. First, the amino acids in the mixture neutralize the hyperacidity of the stomach that accompanies ulcers and thus abolish the digestive action of the stomach enzyme, pepsin, which requires a high degree of acidity for its action. The hydrolysates also supply the body with an abundance of building blocks to heal the ulcer and at the same time to replace the protein deficiency which frequently accompanies the ulcer condition. In most ulcer treatments now used the first objective is aimed at the expense of the second.

This new treatment convinces us more than ever that the amino acids are going to be the popular drugs of the future despite all the talk by the medical profession that they will only be used under a doctor's care. Here we have another form of antacid that or alkalizer that accomplishes real results because of its additional action in supplying building blocks to heal an ulcer. People who believe they are threatened with ulcers because of discomfort or pain will in large numbers start to take this type of product. Also doctors will doubtless go very heavy in prescribing them in all sorts of internal disorders which indicate an ulcerous condition. Also people who have had ulcers and have been cured through the use of these products or otherwise are certain to fall back on them every so often as a means of preventing a recurrence of the condition that formerly drove them to the care of the doctors.

The fly in the ointment so far is the great bulk that must be taken together with the disagreeable odor and taste of these products. But we have great faith in the pharmaceutical manufacturers and we predict that these disadvantages will be eventually overcome. Think back to the time when cod liver oil was the only way to get vitamins A and D, and then think how one can carry any of the vitamins in his pocket and take them easily and without discomfort. The medical profession is trying to prevent these products from getting to the "fad" stage of vitamin preparations, but we don't think they will be successful.

Competition Resulting from War

SOME of the new products which have been developed during the war have brought people into competition who were never in competition before and have upset relationships between them in some instances. This was bound to occur when the Government called upon everyone able to produce certain things to do so whether the products were in their field or not. Many of these people liked very much the large increase in sales volume afforded by these products and determined to stay in them. But when the squeeze came through lower prices, bad feelings broke out in some instances and companies whose relations were friendly before even to the point of one buying certain things from the other, severed all relationships. These things must follow a broad expansion of production for war, but it is too bad that those involved can't write the friction off to war cost and proceed in the way they did before the conflict occurred.

Glycol Vapor for Respiratory Infection

AN APPARATUS now on the market is expected to keep people free of respiratory infections by vaporizing propylene glycol. The vaporized propylene glycol is breathed in by the people who come in contact with it, and, according to the manufacturer, this is preventive against influenza, grippe, laryngitis, bronchitis, sore throat, asthma, sinusitis, pneumonia, tuberculosis, pneumococcal, streptococcal diseases, and similar ills,—quite a large order. It is said "that this glycol, correctly vaporized in a given area, with normal air movement —needed only a fraction of an ounce per hour for some 50,000,000 parts of air to 'control' or 'kill' these 'airborne' bacteria causing infectious diseases. This 'kill' of the bacteria was effectual in every corner and crack, over walls and ceilings, and in the dust on the floor, and in the fabrics of draperies, upholsteries, bedding and bed clothes and similar materials." The apparatus, which is called Vapomatic, is a vaporizer with glass wicks and no moving parts. It is plugged into an electric socket.

New High for DCAT Members

THE Drug, Chemical, and Allied Trades Section of the New York Board of Trade has reached a new high in membership. The total now stands at 600 members, 100 of which were added during the past year. This is the largest number of members by far of any association representing any of these industries and represents real strength to its members. Now that the war is over the Section is again planning its Annual Drug Trade Dinner at the Waldorf-Astoria in New York. The date of the dinner has been set for March 14.

Drug Industry Profiles

WITH this issue we are starting a series of Drug Industry Profiles, the first being written about Justin Dart, president of the United Drug Company. These Profiles will appear every month and will be written about outstanding men who are responsible for the success of our leading drug manufacturing companies.

Guarantee Still Valid Under Drug Act

SOME people in the drug business recently became somewhat excited because the Food and Drug Administration persuaded a court to hold the receiver of adulterated goods equally responsible with the shipper even though the shipper had given the receiver a guarantee. The case in point involved butter which was shipped by a small producer to a larger producer of butter. The large company received a guarantee from the small producer, but the butter was found to be adulterated when the large firm reshipped it. The court felt that the large organization was negligent in not checking the quality of the butter despite the guarantee. Therefore, there does not appear to be anything in this case to worry the drug manufacturers since they have been long in the habit of checking all their raw materials before they use them. The case could not in any way be construed to apply to finished products but only to raw materials.

FDA and Diuretics

THE Eood and Drug Administration has recently expressed the opinion that diuretics are of questionable value and that a hexamethylene product should be labeled with the prescription legend so it would be available for the use of physicians if they desired it, but it should not be labeled for lay use.

Riedel-De Haen Sold for $695,750

FIFTY-TWO drug manufacturers submitted bids for the purchase of J. D. Riedel-De-Haen, Inc., which company was sold last month by the Alien Property Custodian having been taken over in 1942 from the parent company in Berlin. The successful bidder was Ames Co., Inc., of Elkhardt, Ind.—the ethical branch of the Miles Laboratories. The price paid was the highest bid of $695,750 which topped the second highest bid of $401,752 made by Wyeth, Inc., American Home Products subsidiary.

The main product of the company is Decholin, a preparation to increase the flow of bile. It is council accepted, trade-marked, and the patent expires in 1950. It is an ethical specialty that has wide acceptance in the medical profession and sells in large volume in powder, ampule, and tablet forms. Other council accepted products are Nostal, a trade-marked barbiturate on which the patent expired in 1944, and Pernoston, a trade-marked barbiturate on which the patent expires in 1946. The company owns a number of other products some of which are believed to be capable of real development.

A feature of the company from the point of view of purchase was that the physical assets and personnel amount to very little. The company does not do its own manufacturing so that all the purchaser has to worry about is an office in downtown New York and a very small number of employees. There is no plant to think about. This gives the purchaser the opportunity of fitting the products right into his own line, into his own manufacturing laboratories, and into his own sales and detail staffs. The reason for the large number of bidders was probably due to the increased number of companies going ethical who would like to add some real established specialties to their lines and thus open the doors of the members of the medical profession.

British Must Export Cosmetics

BRITISH cosmetic manufacturers have been told by the Government that cosmetics are not essential on the home market today and that the greatest contribution that the cosmetic industry can make is to develop export as soon as possible. This information was given to the manufacturers at a meeting of the new Toilet Preparations and Perfumery Manufacturers Federation held in London last month. L. J. Matcham, chairman of the new body, estimated that the industry could, if given Government encouragement and understanding but without subsidies, reach a volume of £5,000,000 in exports.

Jail Sentence for Misbranding

A DRUG company president recently started serving a sixty day sentence in jail for violation of the Food, Drug and Cosmetic Act. The product on which the violation occurred is said to have contained water, Epsom salts, sodium salicylate, iron ammonium and potassium compounds. It was recommended as being of value in cure of high blood pressure, rheumatism, arthritis, loss of sleep, nervousness, and backache, and as a stimulant to the liver and bile. Proper warnings were not contained in the labeling.

Fluorine and Tooth Decay

SODIUM fluoride as a preventive of tooth decay has received another boost. This time Dr. William J. Gies, past president of the American College of Dentists, as the result of experiments being conducted by New York State in the cities of Kingston and Newburgh, stated that mass prevention of tooth decay by drinking fluorinated water was possible. In addressing the New York Institute of Clinical Oral Pathology, Dr. Geis said that "by the addition of physiological proportions of sodium fluoride to communal water supplies" tooth decay can be controlled without inducing toxic effects elsewhere in the body. "It has been discovered," said Dr. Geis, "that fluorine has cut down the incidence of dental cavities in those sections of the country where it is found in drinking water."

"There is every reason to believe that artificially fluorinated water will produce in humans the same results in kind and degree that are caused by waters in which fluorine is found naturally," said Dr. David Aast, dental director of New York State Department of Health, who outlined to the meeting the systematic fluorination tests begun in June of last year at Kingston and Newburgh. Benefits derived from injected fluorine water accrue during the years of tooth development, he said. After the teeth have calcified. fluorine drunk in water is apparently not effective,

BLACK STAR

PROTEINS COME OF AGE

By WILLIAM T. DOYLE

THE war with its attending nutritional miseries, has focused attention on the problem of feeding huge population groups. "Putting flesh on the bare bones of starved millions in the wake of war is going to be more than a matter of shipping meat, flour, beans and eggs to Europe and the Orient. Ordinary food given in ordinary spoonfuls will not pad out the ribs of men, women and children who are literally too starved to eat. Their weakened digestive apparatuses couldn't handle the food if they could swallow it."[1] The hope for these unfortunates is protein which has been hydrolyzed—or, in the more popular terminology, amino acids.

The history of protein investigation is unlike that of penicillin. It was some hundred and twenty-five years ago when the able French man, Braconnot, discovered the first amino acid. However, up until recently little was known about the functions and distribution in food proteins of the various amino acids. Thought was given more to total protein intake than to the type or quality. In more recent years the biochemist and the clinician have been working closer together in studying the behavior and biological significance of the various amino acids. The result has been some important contributions toward getting medical and surgical patients better faster.

The causes of protein deficiency have been reviewed and discussed at some length by Lund and Levenson,[2] Stare and Davidson,[3] Stare and Thorn,[4] and Elman and Lischer.[5] The most frequent cause without doubt is failure of the patient to consume a sufficient amount of the right type of protein-containing foods, or inability of the individual to assimilate properly the protein content of the dietary. However, another important factor in producing a protein deficiency, seen especially in surgical patients, is the excessive loss of protein from the body. Losses may be from the intestines, through the kidneys, from any wound or orifice of the body, internal exudates and transudates, and from any pathologic condition of the skin that causes oozing or desquamation. In general, losses from the intestines are important only in the presence of copious or long continued bleeding, diarrhea or vomiting, or due to the feeding of diets containing large amounts of roughage, and, from the urine, in the period of the increase in protein catabolism that follows injury or infection, or in the nephrotic syndrome. A third possible factor leading to protein deficiency, one not necessarily restricted to surgical patients however, is failure of the body's mechanism to synthesize protein, due perhaps to liver disease or damage.

Excessive loss of body protein may occur for days to weeks following injuries such as burns, wounds, or fractures. It has recently been shown[6, 7] that patients with severe thermal burns excrete in the urine large amounts of nonprotein nitrogenous products soon after the injury and also lose from the burn surface excessive amounts of plasma protein, and its breakdown products, for long periods thereafter. Early after superficial burns, there is a large output of plasma-like fluid through the skin. This fluid has been shown to contain a fairly high proportion of protein.[8] Later, during the sloughing stage of deeper burns there is a steady and severe loss of protein in the form or purulent material from the bed of granulations. This loss has been estimated by Taylor[9] and measured by Hirschfeld[7] and Co Tui.[10] They found that the protein loss may reach many grams of nitrogen per day, and the amount lost varies directly with the area involved. These losses continue until healing is complete. Co Tui[11] has also measured similar losses in wound exudates and from tube drainage of the upper gastrointestinal tract. Important losses from wounds occur only in large wounds where there may be a profuse discharge such as is seen in osteomyelitis, chronic infections or continued bleeding.

An excessive loss of nitrogen in the urine has been found to occur after surgery[12] and after various injuries, especially fractures.[13, 14] These losses may reach 25 grams per day and may remain high for many days. Many investigators[15, 16, 17, 18] have observed a reduction in the serum protein level following various surgical procedures. Casten[19] has found hypoproteinemia to be associated with anesthesia. Although the studies have not been carried far enough to determine whether protein lost from the blood stream in anesthesia is excreted or merely shifted temporarily into the tissues, this investigator did find a steady reduction in the protein level in the plasma with any anesthetic agent.

During most illnesses there is a disturbance in protein metabolism.[3] In acute infections an increased catabolism of protein is found and may be related more to "intoxication" than to the increased temperature itself.[20] Increased catabolism of protein also occurs in a variety of other illnesses not usually considered as representing an increased protein demand, for example diabetic acidosis, in which the loss of protein may be very great. The physician is often confronted with patients suffering from protein depletion, especially those with lesions of the gastrointestinal tract. In nephrosis the body protein deficit is often great because of the fact that such large amounts of protein are lost in the urine that plasma albumin concentrations of less than 1 gram per 100 cc. are not uncommon and account for the massive edema often seen in this disease.[3] In acute febrile diseases and after serious injuries, protein catabolism is increased and urinary nitrogen excretion may be several times the normal.[14, 21]

At the same time large quantities of nitrogen are being lost in the urine and from wound drainage of such patients, the protein intake is likely to be greatly reduced by reason of pain, anorexia and poor or absent gastrointestinal function. The negative nitrogen balance occurring under these conditions may have serious effects in a few days[22] in the patient with already depleted body protein, and in a few weeks[9] in a patient with excellent protein nutrition.

Hypoproteinemia edema occurs in surgical patients only when the protein depletion is extreme. However, depletion of lesser severity may cause interference with the healing of surgical wounds and burns and with

gastrointestinal function before and after operations, and may be an important factor in the cause of gastrointestinal, leg and decubitus ulcers. Depletion of protein also may predispose a patient to various forms of shock and reduce the resistance to infection. For these reasons the protein deficient individual is a poor operative risk.[2]

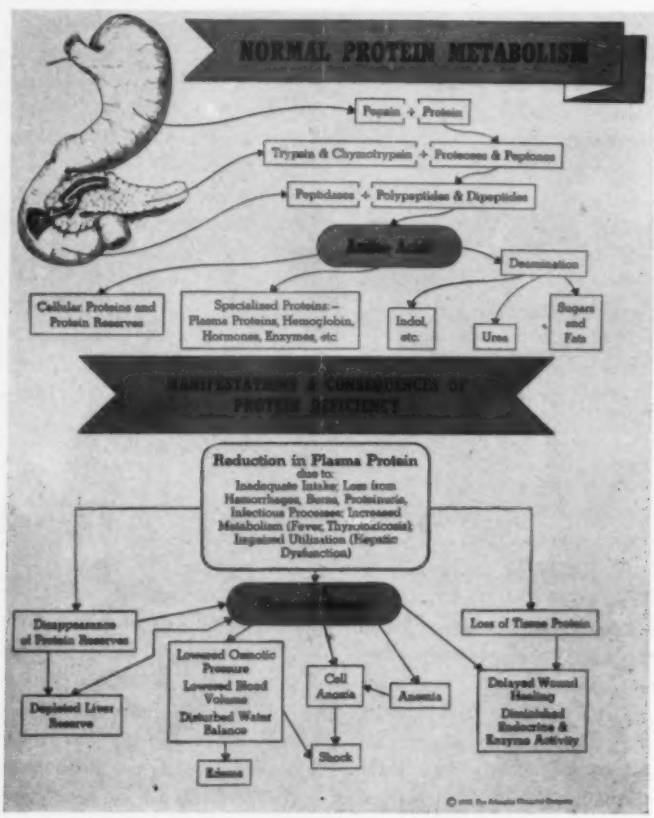
Although hypoproteinemia is now recognized as an important defect in surgical patients and one which must be corrected if mortality is to be lowered, knowledge thereof is of fairly recent date.[5] Jones and Eaton[23] were the first to point out the frequency of hypoproteinemia in surgical patients. They found that edema due to hypoproteinemia was common in patients before and after gastrointestinal surgery and that it was usually associated with a prolonged inadequate food intake. The relation of this type of edema, frequently termed nutritional edema, to hypoproteinemia has since been confirmed by others.

Faulty wound healing is a frequent occurrence in patients with low serum protein levels, although obviously other factors may also be involved. As early as 1919, Clark[24] showed that a low protein diet increased the "lag" period in the healing of experimental wounds in dogs. Others[25, 26, 27, 28, 29] have presented experimental data showing that normal healing of wounds or fractures is delayed by low protein diets. In 1938 Thompson[27] showed that human wound healing was also adversely affected by hypoproteinemia. He found a high incidence of post-operative wound disruption in hypoproteinemia patients compared to a low incidence in normal patients. This observation has been confirmed by others. Depleted protein stores have also been associated with failure of skin grafts.[2] It should be borne in mind in this connection that most foods rich in protein furnish nutrients other than protein. Hence, diets deficient in protein are likely to be deficient in some of these nutrients as well, which may also play a role in wound healing.

The shock connected with surgical procedures, trauma, hemorrhage and burns results from an impairment of the circulation due to a reduction in blood volume, a condition also associated with hypoproteinemia. Elman[30] has shown that in the presence of hypoproteinemia shock develops from very slight losses of blood and that, following such losses, a great decrease in the already low plasma protein concentration ensues. Thus hypoproteinemia existing before a surgical operation can predispose the patient to shock.

In the past few years much evidence has accumulated indicating the basic importance of protein metabolism in relation to the processes of natural and acquired resistance to infection. It has been shown experimentally that animals subjected to prolonged protein undernutrition exhibit a pronounced loss of the capacity to fabricate antibodies and to resist infection. Their antibody producing ability can be quickly restored by injection of adequate amounts of high quality protein.[31] Madden[32] showed that hypoproteinemic dogs were very susceptible to infection and that, once infection had been developed, the regeneration of plasma protein was much more difficult. These facts, as Cannon[31] points out, suggest the need, therefore, of an abundant supply of high quality dietary proteins in all persons who have developed a severe protein deficiency. This replenishment of the protein reserves becomes especially important in surgical patients, particularly in those who have lost much weight.

Subclinical nutritional deficiencies are of importance during pregnancy not only because they may culminate in actual deficiency disease but also because they lower the general as well as the specific resistance of the patient. Pregnancy and parturition, even when normal, place heavy strains on a woman, and the strain is many times increased by the development of complications and abnormalities and by the traumatic effects of operative delivery. The progress in such circumstances is often largely dependent on the nutritional status of the patient.[33]



Several investigators have reported data on the relatively frequent occurrence of hypoproteinemia among patients undergoing various surgical procedure.[23, 34, 35, 36, 37, 38, 39] In some instances, although preoperative hypoproteinemia was found to be rare, a marked decrease in plasma protein level occurred after operations.[39] Others have also presented data showing a fall in plasma proteins postoperatively.[2, 15, 40, 13, 7, 22]

(*Continued on page 722*)

COURTESY PEPSODENT

BACK TO TIN?

"STRANGELY enough, the Japanese surrender has aggravated, rather than eased, the tin position of this country," says WPB Chief J. A. Krug in his report on "Wartime Achievements and Reconversion Outlook," issued last month. Mr. Krug lists four major reasons for this outlook:

1. The tin stockpile was drawn down sharply for the war.

2. The end of the war has not increased the amount of tin immediately available to consuming nations, and it will be some time before sizable amounts will be forthcoming from the Far East.

3. The end of the war has increased the number of claimants for the already meager world supplies.

4. The amounts needed for the civilian reconversion program in this country are greater than supplies made available by military cutbacks.

"Since no tin is produced in this country, with the exception of small amounts of secondary material, we must look abroad for supplies. In prewar days our supplies came from Far Eastern possessions of the British and Dutch but these places were overrun by the Japanese and no one as yet knows just how much tin is there. The report says:

"Little is known yet—though information has begun to come in—about the extent of destruction of tin properties in the Far East, or the stocks of metal or concentrates which may be immediately available in these areas. It should be remembered in this connection that the amount of tin which may be available to the United States from these British and Dutch areas will be determined in international negotiations in which the needs of other nations will have to be considered.

"There are no grounds, therefore, for optimism about the amount of new tin this country may count on in the near future. It is possible that destruction will be less than is feared, and that sizable stocks may be discovered. But prudence dictates a policy of continued careful husbanding of our stockpile so as to serve the essential needs of industry, on the assumption that additional new supplies will not be available in significant amounts for a minimum period of one and one-half to two years.

(*Continued on page 639*)

"Pacific Black Diamonds" painted by Franklin Boggs for the Abbott Collection of paintings of Army Medicine.

TROPICAL DISEASES

By M. A. LESSER

ALTHOUGH the war is over, this nation still faces invasion, not by men, but by microbes. Never before have so many people from temperate zones been exposed to the bacteria, parasites and insects that seem to thrive so luxuriously in tropical and subtropical climates. Thanks to medical progress, some of these diseases held no particular terrors because adequate protection against them could be given. In other instances, however, it was a running battle all along the line. Together with enemy bullets and shells, our troops had to face and fight malaria, dysentery, dengue fever, filariasis, leishmaniasis, schistosomiosis and other "queer" diseases.

History records the devastating effect of diseases spread by man as he traveled from one part of the world to another.[1] Many of our troops on returning will bring infections with them. Already it is becoming evident that the war will exert a profound effect upon medical services and pharmaceutical manufacture, not only for ourselves but for the many countries we will be called upon to supply.

"It is inevitable," said Mackie[2] in a discussion of the post-war dangers of tropical parasitic diseases, "that numerous carriers and individuals with latent infections will be scattered over the country following demobilization. Certain of these conditions will be transmissible and will subsequently appear in persons who have not been out of the country." Similarly, Eusterman[3] has noted that the chief concern of physicians lies in those common tropical diseases which frequently lapse into a chronic stage and thereby become the source of both individual infection or of new outbreaks among the civilian population.

When people speak of tropical diseases, they generally have in mind those conditions which appear to be peculiar to the warm climates. Actually this implication is incorrect. Although in some instances climate acts as a limiting factor because of its controlling effects on certain intermediate hosts and insect vectors, in many of the more important conditions the limiting factors are merely those determined by sanitary and hygienic conditions. Many important,

so-called "tropical diseases," are quite capable of establishing themselves and flourishing in the temperate zones—a fact well established in medical history. Mackie[4] feels that any impact which tropical diseases may exert upon the United States will be noted predominantly in rural areas where the general level of sanitation is inferior to that of large urban centers.

The influence of this new outlook is already evident in a number of ways. Not only has it revised the thinking of physicians and the curricula of medical schools, but its effects are also being noted in requests for drugs not ordinarily stocked by the local druggist. Already a survey in one city reflects what may well be an indicative trend—a growing demand for prescriptions and products useful in tropical medicine.[5]

Up to a few years ago, except for scattered work done by a few small groups, comparatively little effort was devoted to the study of tropical diseases. American physicians normally had little or no contact with these maladies. Being practical people, they lacked the stimulus for intensive study of diseases they seldom, if ever, saw.[6] The coming of war provided the requisite stimulus to intense interest in the subject of tropical medicine and it appears that this interest has become a permanent one.

Aside from the immediate problem of the returning soldier and his possible influence on the health of the community in which he resides, there are other important factors that rate careful consideration. The world has become much smaller during the last few years. Gone are the barriers of time and distance which formerly protected this nation from many foreign diseases. Trade with and travel to other parts of the world, including the tropics, is expected to be greater than ever a few years hence. Obviously, any disease formerly confined to foreign shores may appear in this country at any time.[7] The expansion of American commercial interests to tropical areas will also carry with it a certain degree of responsibility for the health conditions in these sections—a responsibility already assumed by American business groups in the past. Indeed, it has been said[8] that tropical diseases like malaria may be among the principal determining factors in deciding the failure or success of many post-war plans.

Although many problems of tropical medicine still await solution, there can be little doubt that the intensified interest and application of proper methods and materials will eventually solve them. One merely needs to recall the Panama Canal to appreciate the results obtainable when medicine and engineering combine to clear disease-infested tropical areas. Numerous small islands and atolls in the Pacific, now suitable for healthy living, further attest the results obtainable by medical officers versed in tropical medicine and sanitation. With such concrete examples serving as models for other countries to follow in eradicating disease, there can be little question but that American drugs and chemicals, as well as American equipment, will find a ready demand in tropical areas.

Protection against certain diseases is available, including a number that might be classed as tropical diseases. The armed forces, for example, use preventive vaccines against seven key diseases: typhoid, smallpox, tetanus, typhus, yellow fever, cholera, and plague.[9] Such protection, unfortunately, is not available for other major tropical menaces. Military experiences, based on the wide spread movements of large numbers of men, indicate that the epidemic diseases of most significance, were malaria, the dysenteries, dengue and filariasis. Other tropical diseases, while of definite importance, were not so frequently encountered and were more or less limited to certain areas.

There is quite unanimous agreement that malaria constitutes the greatest menace to health in the tropics. Malaria is one of the world's most prevalent communicable diseases. As remarked by Coffee[10] it is a foremost cause of sickness and stays with its victims, laying a burden of chronic tiredness and poverty upon them. It decides the fate of millions of people and in time of war has been a determining factor in the course of battles. Aside from its constant meance in the tropics, malaria is a serious problem in the United States. Claiming an estimated 2,000,000 victims in this country, Malaria causes economic losses running into millions of dollars.

Transmitted through the bite of the Anopheles mosquito, Malaria has the peculiar distinction of being caused by four different types of parasites.[1, 11] Unfortunately, however, the tolerance a population develops against a strain of malaria peculiar to one section confers little immunity against strains from another area.[8] Even a severe attack produces only transitory immunity against the same type of malaria and none against the other types.

The toxic by-products thrown into the blood stream by the parasites account for the malaise, the chills and the fever characteristic of the disease. Clinically active malaria, regardless of the causative parasite, displays three basic symptoms; namely, fever, anemia and enlargement of the spleen. The first two symptoms are definitely related to the development of the parasites; the fever occurring at the time of their development, and the anemia arising from the destruction of the erythrocytes on which the parasites have fed.[12] Enlargement of the spleen is detectible during the second week following the primary onset. At first it may be soft, but sooner or later it becomes hardened and sometimes fibrous.

Individual types of malaria may in addition display other and very striking symptoms. In a warning that malaria should be suspected in every person returning from the tropics or subtropics, it has been pointed out that the disease may simulate a number of other conditions. Diagnosis through examination of blood smears and the identification of the species responsible is important in all such cases.[13]

The tools so favorably used to combat many diseases are not available for malaria. Thus there is no effective

(*Continued on page 718*)

The Sugar Shortage Delays

BLACK STAR

THE alcohol situation is in somewhat of a muddle so far as the distillers are concerned. In the first place the Government owns the entire crop of molasses and has been losing money on its disposition. Furthermore, the Government had a stockpile of 80,000,000 gallons of alcohol, according to WPB Chief J. A. Krug's report of October 9. In the first place the Government wants to come out even on its molasses deal, and in the second place it wants its stockpile of molasses disposed of at proper prices. To accomplish this purpose, the Government has further cut down the supply of molasses to the distillers, forcing the distillers to handle alcohol from the stockpile to fill the demands of their customers. Also the Government has upped the price of molasses and has also allowed an advance in alcohol prices to 53 cents per gallon to compensate for the rise in molasses prices.

The cut in molasses supplies, which stood at an allowance of 75 per cent of former use for the September period, now stands at 60 per cent of former use, forcing distillers to make up the balance of 40 per cent with stockpile alcohol. Alcohol distillers complain that they get no profit out of handling this alcohol for the Government as the discount is only sufficient to cover shipping and other handling costs. Further they complain about the quality of this stockpile alcohol which was good enough for the manufacture of butadiene for synthetic rubber but which is not satisfactory for many other uses. They have asked for an additional rebate of 5 cents per gallon for redistillation costs which they claim is essential before the alcohol can be sold to most of their customers.

With the cessation of hostilities it appears that sufficient production of butadiene can be obtained from petroleum sources for the amount of synthetic rubber that will be needed. The production of planes, tanks, vehicles of all kinds for the Armed Forces consumed enormous amounts of rubber, but this demand has completely disappeared. Also it will be remembered that even during the latter part of the war alcohol was being produced in quantity enough to permit of liquor holidays so there should be no difficulty in obtaining enough alcohol for all uses under peacetime conditions. However, so far as productive capacity for alcohol is concerned, there should be no further shortage, but the matter of raw materials still presents something of a

Normal Alcohol Supply

problem. The main raw material for alcohol production—molasses— seems likely to continue in scant supply throughout 1946 as a result of the sugar shortage. The Government might continue molasses controls for some time to insure an equitable distribution. The early end of alcohol control under present conditions might result in large amounts of molasses moving into sugar and animal feeds at the expense of industrial alcohol production.

The Cuban Agricultural Department estimates the 1946 sugar crop at 4,161,829 long tons. However, estimates in the trade point out that this estimate requires a continuation of the favorable weather conditions that have prevailed. Under conditions that might obtain, these estimates are lowered to 3,700,000 to 4,500,000 tons. Roughly a sugar production of 4,000,000 tons will yield 205,000,000 gallons of molasses. This year the U. S. contracted for 70,000,000 gallons of Cuban molasses, but 1946 purchases have not been indicated. The amount available for the U. S. will depend on how much is allotted for motor fuel in Cuba and the amount for shipment to Britain. The motor fuel contains 70 per cent alcohol from molasses, and 30 per cent gasoline. It is more advantageous for the Cuban mills to sell molasses for industrial alcohol and a bill to make the use of alcohol motor fuel mandatory in Cuba was recently defeated in the Cuban legislature.

No synthetic alcohol has been reaching the market at all as the two producers have been disposing of their entire output in other directions. One synthetic producer sold his entire output to a producer of plastics and films before his synthetic alcohol plant was erected, and the other producer, who formerly sold to all types of consumers, is now said to be using the alcohol he produces for production of butadeine in his own plant. He is said to be caring for his normal customers by selling them Government stockpile alcohol.

Normal supply of molasses and alcohol will have to wait for a return to more normal world conditions in production of sugar to meet the demand. This will probably occur not before the latter part of 1946 at the earliest. In the meantime, the removal of subsidies from grain should result in a cost of grain alcohol somewhere around $1.13 per gallon as stocks of low cost material are depleted. This would be a terrific blow to those in this industry who insist on using alcohol produced only from grain.

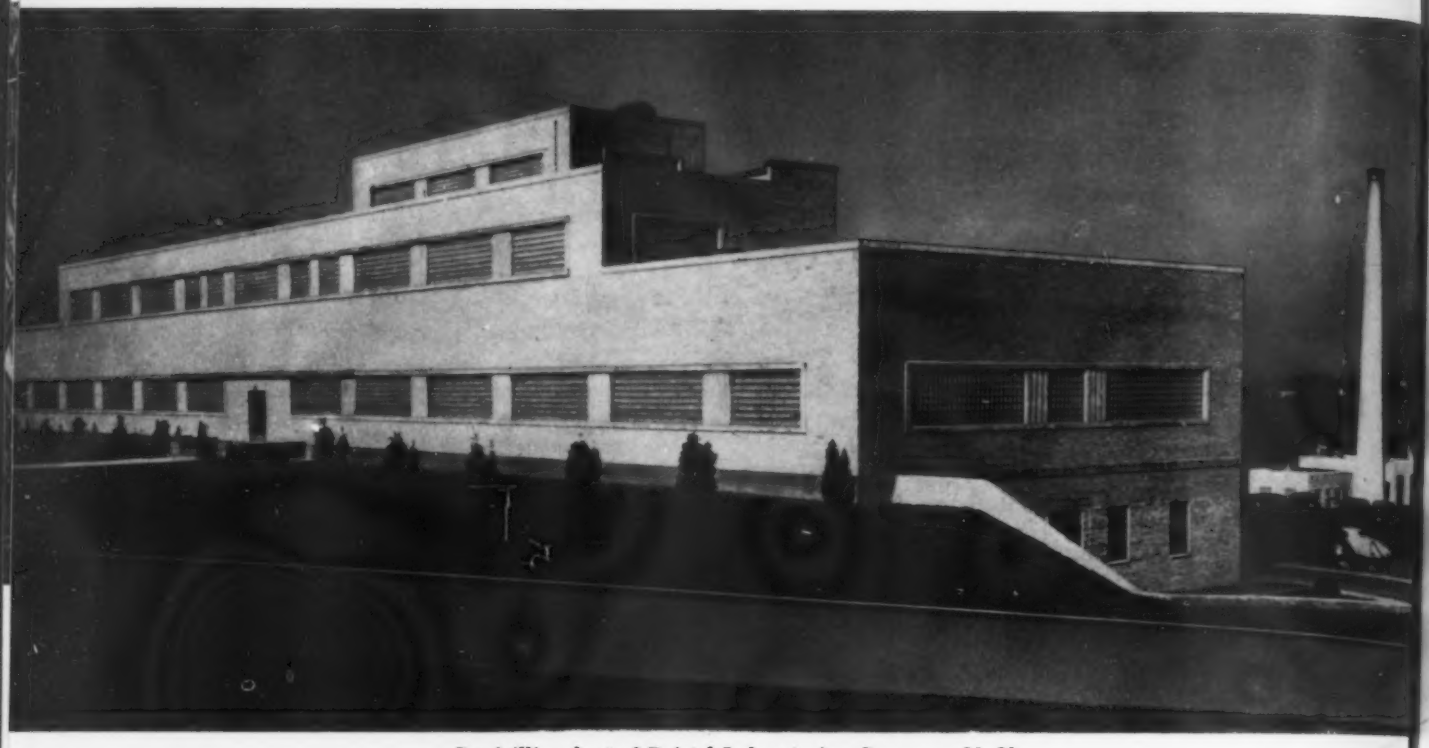
The terrific expansion in alcohol production during the war period is clearly indicated by the following table from WPB Chief Krug's report issued last month:

Following this table in the report, the following statement is made: "Reconversion problems revolve around the disposition of the D. S. C. stockpile of about 84 million gallons, and disposal of surplus plants in projects having an aggregate capacity of some 80 million gallons per year."

ALCOHOL — SUPPLY, CONSUMPTION AND STOCKS, 1941-1945 (Millions of Gallons)

SUPPLY	1941	1942	1943	1944	1st Half 1945
Industrial Alcohol Plants	217	177	203	284	111
Synthetic	43	50	56	60	29
From Molasses and Grain	n.a.	127	147	224	
Beverage Plants	—	120	228	225	80
Foreign	—	1	12	33	15
Total	217	298	449	601	235
CONSUMPTION					
Direct Military	18	46	40	27	15
Lend-Lease	9	25	63	60	23
Synthetic Rubber	—	—	126	330	155
Anti-freeze	23	30	51	32	9
Indirect Military and Civilian	165	128	148	160	81
Total	215	229	428	609	283
GOVERNMENT STOCKS					
End of year	—	64	87*	81	84

*Stocks reached 138 million gallons in July, 1943



Penicillin plant of Bristol Laboratories, Syracuse, N. Y.

Penicillin Supply and Demand

THE sale of the plants owned by the Defense Plants Corporation in this industry will be interesting to watch. These plants consist of various plants for the production of penicillin. Under the original agreement with the DPC, those who built and operated the plants paid for by the Government were to be allowed to meet the highest bid offered for their individual plants, but now it is understood that this agreement has been rescinded and that the highest bidder will get the plant that is put up for sale. Also there was some understanding about the plants not being sold until sometime after the war was over, and the war is not officially over yet so far as our Government is concerned, still plants are already being upt up for bids.

In the case of penicillin all producers are short of the drug because of the tremendous increase in use in this country and because of the heavy demand for export. Since the fight for position over the long run in this drug continues, all manufacturers want additional supplies, and some of them would obtain these supplies at the expense of other manufacturers if they could. Manufacturers who have long been in the field of ethical drug products resent the entry into the field of people who were not engaged in this field before the war. They feel that these companies took advantage of war conditions to get into this additional field and it is reported that they would not hesitate to take steps to force them out of the field, even to the extent of trying to outbid these people for the plants which they built and have been operating for the Government.

However, these people who entered the ethical drug field during the war quite generally feel that they want to stay in the field and, if possible, they are very determined to do so. When the war stopped so suddenly and large supplies of penicillin for the invasion of Japan were no longer needed, it was thought that penicillin supplies would back up and be in very serious oversupply. However, no such thing has occurred and supplies have become progressively tighter until at the end of last month the War Production Board had to call into session its advisory committee on the product.

Those who are new in the ethical field do not under-

TEXAS STATE COLLEGE FOR WOMEN
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stand why in the face of a demand which greatly exceeds supplies, the prices continue to go down. They do not understand the business methods of the ethical drug manufacturers who frequently cut prices for any number of reasons even though demand is excellent. A few years ago sulfa drug tablets were selling below cost. This was explained by one very large manufacturer, who was accused of instigating the unsettled market, as being due to a price given by one manufacturer which included discounts for certain classes of trade that could not be met by the cutting manufacturer without a general price reduction. Others thought that the price-cut was made simply because one or more other manufacturers had been in the field of certain sulfa drugs first and were getting a very high percentage of the business. But whether the price was due to upsetting conditions due to varying distributive policies or to a fight for position in the field of sulfa drugs, goods were sold below cost despite an excellent demand.

When penicillin was first released to the public on March 15, 1945, the same policy of cutting prices to meet all conditions of all competitors as to distributive policies, position, and similar things took place. Prices which were first quoted at $2.40 per vial of 100,000 units, were down to $1.54 within a few days. Following this sharp opening skirmish, prices continued to be cut by various manufacturers all of whom refused to be underquoted and all of whom wanted to know just what the floor to the market really was. Finally the price was quite stable at 75 cents per 100,000 units only to have one manufacturer notify its wholesalers that it was reducing the price to 60 cents. Prices to Government, State, and Municipal institutions—which are large users and steady users of the drug—have been very competitive. Lower prices have been quoted to such institutions as a matter of routine but every once in a while some producer will offer these institutions a still lower price and this causes an unsettled condition all over again. Some months ago it was reported that a pharmaceutical manufacturer who did not make his own penicillin but paid a manufacturer 54 cents per 100,000 units for it, sold to an institution at 47½ cents.

Because of the sharply reduced prices existing today, many manufacturers are losing money in face of the strong demand. Because of this condition, some manufacturers are wont to sell some of their material in the export market where prices above domestic levels can be obtained. This increases the stringency of the drug in this country. At the moment it appears that penicillin is far from its peak demand although one cannot be certain of this for various reasons. One reason is that the heavy export demand might eventually disappear to a large extent as other countries of the world erect and operate their own plants for production of the drug. Another reason is that when anything is scarce, orders are placed by buyers with all available sources in the hope that one or more of them will ship part of the orders placed with them. When shipments do come through, the amount of outstanding orders dwindles rapidly. Therefore, it is impossible today to gauge the size of the penicillin market accurately.

But there is no doubt that doctors in this country are turning to the use of penicillin in large numbers of cases. And since they have found that they can administer it in milk and ice cream, as well as in tablet, capsule, ointment, and other forms, its consumption is mounting rapidly. Before the war was over, it was the doctors of the Armed Forces who had most of the experience with, and knowledge of the use of penicillin. But now the civilian doctors are learning of its benefits and they are being quick to take advantage of its effectiveness in known cases and to experiment with it in other conditions. Also doctors from the Armed Forces, who had wide experience with penicillin, are beginning to trickle back into civilian life and they are capitalizing on their experience with penicillin while in the service.

Some of the new entrants into the ethical drug field during the war by way of penicillin production are so determined to stay in this field that they stand ready to spend large amounts of money in one way or another to prevent their being squeezed out of the market. One manufacturer which does not make anything else in the drug field except penicillin has been trying to find a real experienced man from the ethical drug business to head up the penicillin subsidiary at a salary of $50,000 or more if necessary. The program of this company would incorporate the development of ethical drug specialties to supplement the company products so that the company would eventually be widely known and respected by the medical profession. Further this same company is reported to have made substantial offers to buy one, two, or three established companies in the ethical drug field as a quick and certain means of assuring them a permanent place in the industry and a continued and certain direct sale for their production of penicillin.

Another company in the field who has been operating a penicillin plant paid for by the Government, hopes to be able to bid this plant in and continue to operate it under private ownership. However, if when the bids are in, some other manufacturer outbids them, they stand ready immediately to start construction of a new plant built with their own money. In other words, these companies like the ethical drug business and are determined to stay in it no matter what the cost. There is no "freeze-out" so far as they are concerned at the present time. What the outlook will be some time in the future is hard to tell, but from the present situation it appears that production of penicillin for the war emergency has brought about an increase in the number of ethical drug manufacturers. And many of these new entrants are companies of resources from their normal business activities sufficient to enable them to stay in this new field if they want to, the only deterrant being the cost of staying in. And manufacturers long established in the ethical field are apparently trying to make this cost just as high as they can without jeopardizing their own positions.

Scraping spore of* streptomyces griseus *from culture for preparation of inoculum.

Streptomycin*

Penicillin may be making some small revolution in surgery, and I am glad to have had some part in it. It is, however, not the end. There is still plenty of scope for the chemist to synthesize penicillin, and then tinker with the molecule so that the present imperfections of penicillin can be remedied. Then there are thousands of micro-organisms other than Penicillium notatum *which can manufacture in their growth complicated substances, and some of these may be better than penicillin, or they may have a constitution which will give a clue to fresh chemical linkages which are destructive to bacteria.*

—Sir Alexander Fleming,
The Lister Memorial Lecture, 1944

SINCE the early days of bacteriology when Pasteur established the responsibility of microbes for the causation of certain human, animal, and plant diseases, it has been known that other micro-organisms, later designated as antagonists, were able to combat and destroy the disease-producing agents. This inhibition of the growth or metabolic activities of pathogenic bacteria and other micro-organisms is brought about by the antagonist causing unfavorable environmental changes, such as depletion of nutrients, shift in hydrogen ion concentration, oxygen deficiency, or by the production of "staling" factors or of a definite chemical substance, termed an antibiotic. Such complicated materials are manufactured not only by micro-organisms but also by algae, lichens, and many flowering plants, and the antibiotic lysozyme even occurs in such animal products as egg white, milk, saliva, and tears. However, today, the antibiotic substances which show most promise in the treatment of human diseases due to micro-organisms are those produced by the microscopic organisms classified as fungi, actinomycetes, and bacteria. From the fungi are formed the well-known antibiotics penicillin, clavacin, helvolic acid, and gliotoxin, among others, and from the bacteria the early discovered pyocyanase and the familiar gramicidin and tyrocidine.

As Fleming has stated, "It would be remarkable if the first useful antibiotic, penicillin, to be discovered should be the last or even the best." Accordingly, as a result of the successful application of penicillin to many bacterial diseases, an intensive search is being made at the present time for new agents capable of inhibiting the growth of, or destroying other pathogens resistant to the action of penicillin. Although some fifty such compounds or preparations already have been isolated from micro-organisms, there is sufficient evidence that many more can be obtained without too great difficulty from the varied microbiological population of the soil. In general, the isolation of antagonistic organisms from this source is carried out by plating the soil on agar media containing washed living cells of bacteria, and isolating the antagonistic organisms from the plates. Proper media and favorable conditions are selected for the cultivation of these antagonistic organisms, and for the production of the antibiotic substance. The active antibiotic is isolated from the medium and then is concentrated and purified. The selection of a preferred antibiotic is largely governed by its toxicity to animals, its activity in the animal body, and by its influence upon particular disease-producing bacteria—in other words, by its specific bacteriostatic spectrum. This activity is measured at various dilutions against a whole range of test organisms (bacteria) which are roughly designated either as gram-positive or gram-negative.

By use of the aforementioned procedures, Waksman and Woodruff, in 1942, were able to identify a soil micro-organism, *Streptomyces lavendulae* which, when grown in a variety of media ranging from glucose-tryptone solutions to simple synthetic media containing an amino acid or even a nitrate as source of nitrogen, produced a new antibiotic, streptothricin. Further studies by Waksman and his students, Bugie and Schatz, enabled them, in 1944, to isolate the organism *Streptomyces griseus*, and to grow it in the presence of complex growth-producing substances, such as meat

*Reprinted from "THE MERCK REPORT"

By C. R. ADDINALL, Ph.D.,

Merck Research Laboratories

extract or corn steep, with the production of another new antibiotic, streptomycin.

These water-soluble, nitrogenous, thermostable, basic organic substances are characterized by selective bacteriostatic activity against gram-positive and gram-negative bacteria, and by their limited toxicity for animals. Unfortunately, streptothricin has very little activity against a number of clinically important bacteria, such as the gram-negative *Pseudomonas fluorescens* and *Ps. aeruginosa* and the gram-positive *Bacillus mycoides* and *B. cereus*. Moreover, streptothricin exhibits a delayed toxicity, causing the death of mice several days after subcutaneous administration, a phenomenon which is even more marked in larger animals, including the monkey. This as yet inexplicable delayed toxicity has caused a shift in emphasis in most research laboratories to streptomycin, even though the therapeutic index of streptothricin is, in general, favorable.

The micro-organism *Streptomyces griseus*, which produces streptomycin, was found in heavily manured field soil and belongs to the natural order known as the Actinomycetes. These organisms, which occur abundantly in soils, silt, and dust, and cause serious animal and plant diseases, are closely related to the bacteria and fungi. Like the bacteria, they are unicellular organisms, but similarly to the fungi, they produce a mass of filaments or mycelium. The order, in three families, comprises the genera *Mycobacterium*, *Actinomyces*, *Nocardia*, *Streptomyces*, and *Micromonospora* which are represented in nature by numerous species of which many have been described. Of these, only a few have been studied in detail, but already six of them have been shown to be antagonists and to produce the antibiotics micromonosporin, proactinomycin, actinomycetin, actinomycin A and B, streptothricin, and streptomycin. The last-named antibiotic, produced by *Streptomyces griseus*, an organism already previously isolated from the soil by Waksman in 1919 (then classified under the older name, *Actinomyces griseus*), and so similar in its properties to streptothricin, was given the designation streptomycin, a derivation from the generic name *Streptomyces*, recently conferred on that group of the Actinomycetes which produce aerial mycelia and sporulate.

The nature of the medium in which the organism *S. griseus* was grown proved to be of considerable importance, and a medium finally was adopted consisting of 1 per cent glucose, 0.5 per cent peptone, 0.3 per cent meat extract or 1.2 per cent corn steep, and 0.5 per cent sodium chloride. The organism did not form any acid, either in the submerged or in stationary cultures,

Assaying streptomycin by the cup-plate method. Photos courtesy of Merck & Co.

and, although good growth was obtained in the stationary condition, growth was much more rapid in agitated cultures. In surface culture, the growth of the organism proceeded from five to twelve days, and then the streptomycin was isolated from the culture filtrate by adsorption on active charcoal (Norite A). The crude antibiotic was removed from the charcoal by elution with acidified alcohol and the eluate was neutralized with sodium hydroxide. The addition of ten volumes of ether gave a highly concentrated aqueous solution of streptomycin, which was further concentrated by evaporation under reduced pressure.

The antibacterial power of streptomycin, measured in units of activity per gram of ash-free dry material for various organisms, is tabulated as follows:

Gram-positive Organisms		*Gram-negative Organisms*	
B. subtilis O.	125,000	*Phytomonas pruni*	100,000
B. mycoides O.	250,000	*E. coli*	25,000
B. cereus	30,000	*S. marcescens*	25,000
S. aurens	15,000	*A. aerogenes*	10,000
S. lutea	100,000	*P. vulgaris*	10,000
M. phlei	100,000	*S. aertrycke*	2,500
M. tuberculosis	30,000	*Ps. aeruginosa*	1,000

In other words, 1 gram of the ash-free, dry streptomycin preparation, even when diluted 125,000 times, would just inhibit the activity of the gram-positive organism, *B. subtilis O.*· or, when diluted 10,000 times, would

inhibit the activity of the gram-negative *A. aerogenes*. From these measurements and similar studies, the susceptibility of a wide variety of pathogenic organisms to the action of streptomycin has been demonstrated, and from such studies and from those involving the control of experimental diseases in laboratory animals, the probable fields of clinical usefulness for this antibiotic can be predicted.

In the isolation and purification of antibiotic substances such as penicillin and streptomycin, the bacteriologist has to depend on biological assay. So, too, must the research chemist, the pharmacologist, and the clinician employ this method until such time as pure crystalline material becomes available or until a suitable chemical test has been devised for the identification and quantitative determination of the active principle. The unit of measurement first used by the bacteriologist, such as the dilution unit originally employed for measuring the activity of penicillin, may be replaced by a more suitable unit such as the Oxford penicillin unit, and later by a weight unit based on the crystalline material. Such a situation has arisen in establishing standard units for streptomycin. The original method was based on its bacteriostatic effect against a given strain of *Escherichia coli*. A unit of streptomycin thus was defined as "that amount of material which will inhibit the growth of a particular strain of *E. coli* in 1 cc. of nutrient broth of other suitable medium." Today, the official unit for streptomycin is 1 microgram of pure streptomycin base. This is approximately equivalent to 1 unit as determined by bacteriological assay.

Assays of streptomycin in biological material or other preparations are based on the inhibition of growth of a standard strain of *E. coli*, as determined by the dilution method, using either a series of dilutions in liquid media or the agar-plate streak method. The actual determinations are carried out by the agar diffusion or so-called cup method, using a standard strain of *B. subtilis*, as developed by Foster and Woodruff for streptothricin assay. The Merck investigators, Stebbins and Robinson, have modified the cup method to make it suitable for determination of streptomycin in body fluids by using the streptomycin-sensitive *S. aureus* S.M. (an organism not inhibited, as is *B. subtilis*, by normal blood), and by enhancing the activity of streptomycin in the culture fluids by decreasing the acidity and the salt concentration. Quite recently, Heilman, at the Mayo Clinic, developed a method for determining the concentration of streptomycin in blood serum, spinal fluid, bile, and other body fluids, by utilizing a technic similar to Fleming's slide-cell method for the assay of penicillin in blood and other body fluids. In adapting the method for the assay of streptomycin, the principal change has been to use a culture of *B. megatherium* instead of *S. pyogenes* as the test organism.

It is possible that further purification of the streptomycin concentrate will eliminate some of the undesirable side reactions which may be due to the presence of impurities in the present material. However, the present availability of a pure crystalline preparation has provided a weight unit for the standardization of streptomycin.

Fried and Wintersteiner, of the Squibb Institute for Medical Research, recently announced the isolation of crystalline salts of streptothricin and streptomycin with Reinecke's acid. The acid eluate from the charcoal adsorbate was precipitated with phosphotungstic acid, and the bases from the precipitate were converted into crude picrates which were fractionated by chromatographic methods. One or more of the fractions, after removal of the picric acid, yielded water-soluble amorphous products. Addition of Reinecke's salt, $NH_4[Cr(SCN)_4(NH_3)_2]H_2O$, to an aqueous solution of highly active fractions, gave crystalline precipitates which, on recrystallization from water, yielded thin plates of streptomycin reineckate, melting at 162-164°C. (with decomposition), assaying 370-410 units per mg. —indicating that pure streptomycin base should have a potency of 800-810 units per mg. Decomposition with silver sulfate yielded streptomycin sulfate assaying 850 units per mg.

Almost simultaneously, the Merck laboratory workers, Kuehl, Peck, Walti, and Folkers, made public their findings that, when rather highly purified concentrates of streptomycin were treated with methyl orange (the sodium salt of helianthin), a crystalline salt formed which served for purification of the active principle. Recrystallization from aqueous methanol gave crystals of streptomycin helianthate, melting at 220-226° C. (with decomposition), assaying 350 units per mg. This helianthate can be converted into the hydrochloride, sulfate, or any other salt suitable for chemical or therapeutic purposes. Streptomycin hydrochloride was readily obtained as a white powder with a specific rotation $[\alpha]_D - 84°$, and an activity of about 800 units per mg. The crystalline salt of streptomycin and *p*-(2-hydroxy-1-naphthylazo) benzenesulfonic acid also was prepared from streptomycin hydrochloride and the dye, Orange II. This salt showed an activity of about 300 units per mg. All the above salts are antibiotically active in proportion to their content of base component.

Streptomycin is a drug of rather low toxicity; its lethal dose for 50 per cent of mice treated with the pure material is about 750 mg. per Kg. of body weight administered subcutaneously, and 3 Gm. per Kg. when given by mouth. In chronic toxicity studies, 25 mg. per Kg. per day have been given subcutaneously to monkeys for 66 days, and 100 mg. per Kg. per day to rats for 75 consecutive days. In all of these experiments, liver and kidney function tests, including routine urinalysis, remained negative, and hematological findings, except for a slight normocytic anemia, were normal throughout. Moreover, peroral administration, as well as subcutaneous and intramuscular injection, of mod-

(*Continued on page 701*)

JUSTIN DART

He Agrees with Horace Greeley

By WILLIAM T. DOYLE

THE drug industry has been watching and talking about young (38) Justin Dart for the last four years. When Sewell Avery recently offered Dart the presidency of big rich Montgomery Ward, U. S. business leaders stopped to have a closer look at the boss of United Drug.

Dart's entrance into the drug field was largely by chance. He graduated from Northwestern in 1929 where he starred on the football field and in the classroom. Like a lot of other fellows of that era, Dart had the opportunity to sell stocks and bonds, but he thought he wanted a future with more stability. The late Charles Walgreen offered him a job as a stock boy in one of the Walgreen stores. Young Dart worked a six day week from 7 A.M. to 7 P.M. The job was tough but the challenge was there, and Walgreen apparently liked the looks of Dart. In 1932, the Northwestern alumnus was upped to the head of the Walgreen retail stores. He remained in that job until 1939 when he was made the operating head of Walgreen.

Much has been said about the influence of Dart's marriage to Walgreen's daughter on his rise in the company. Without a doubt, there is some truth in this assumption, but it has been overdrawn. A close analysis of the record reveals that the present United Drug president was responsible for several progressive moves at Walgreen's which serve as measuring sticks for evaluating the business acumen of the former Northwestern football star.

Super drug stores, improved purchasing methods, and emphasis on building up the prescription departments are only a few of the constructive changes made during Dart's tenure with the big Walgreen chain.

The young executive was divorced from his boss's daughter in 1939 and soon after married the pretty Warner Brothers actress, Jane Bryan.

In 1941, Dart was offered the presidency of the Liggett Drug Company, the chief retail unit of United Drug, Inc. Before taking active charge, the former Walgreen head made an exhaustive survey of the United Drug organization. After careful consideration, he felt that his experience could be used to advantage in the Liggett post. It is no secret that the United Drug organization was in need of a hypodermic. Dart's youth, broad experience with Walgreen and his fresh new ideas appealed to the management of the Boston drug firm.

United Drug, Inc. is a big sprawling operation that includes 346 retail stores operated by Liggett, the Owl Drug Company with 135 stores in the Pacific Coast area, 47 wholly-owned Canadian Liggett stores, and some 10,000 independent Rexall druggists in the U. S., Canada, England and South Africa. More recently, the smart, fast-moving west coast Sontag chain (45 stores) has become a part of the United Drug family. To top things off, United also owns numerous manufacturing units which supply many of the organization's needs.

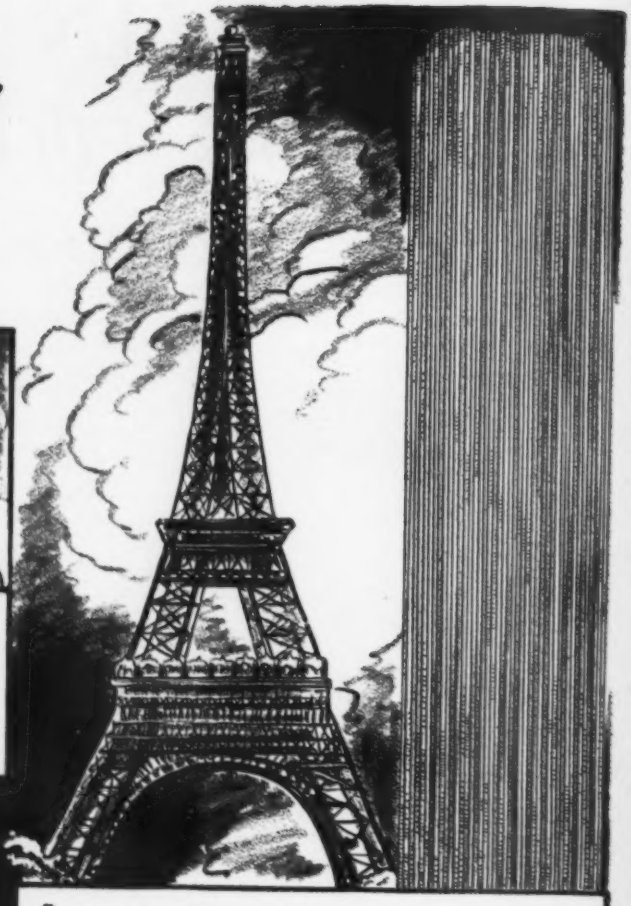
Dart went to work at Liggett with his coat off and sleeves rolled up. Plans were set for launching a chain of super-duper units that made the old Liggett stores look archaic. Smart merchandising was coupled with

(Continued on page 728)

Incredible- but True!

DRAMATIC ILLUSTRATIONS OF EMPIRE'S PRODUCTIVE CAPACITY

THE WORLD COULD BE GIRDLED WITH CARPETING, TACKED ON BOTH EDGES WITH ONE INCH BETWEEN TACKS. AND ALL THOSE TACKS COULD BE PACKED IN THE MILLIONS OF CARTONS EMPIRE COULD MAKE IN JUST ONE DAY!



IMAGINE 406 STACKS OF NICKELS AS HIGH AS EIFFEL TOWER (PARIS) ... RECEIPTS FROM THE SALE OF ALL THE ROLLS OF CANDY FRUIT DROPS THAT COULD BE PACKED IN THE CARTONS EMPIRE COULD PRODUCE IN JUST ONE DAY!

ALL THE MILLIONS OF POUNDS OF FRESH PORK SAUSAGE THAT ALL 900 U.S. GOVERNMENT INSPECTED ESTABLISHMENTS PRODUCE IN 7 WORKING DAYS WOULD JUST FILL ALL THE CARTONS EMPIRE COULD MAKE IN JUST ONE DAY!

A TRANSCONTINENTAL CLOTHESLINE WOULD BE FILLED EVERY MONDAY FOR A YEAR ... WITH ALL THE FAMILY WASHINGS OBTAINABLE FROM THE SOAP POWDER CONTAINED IN ALL THE AVERAGE FAMILY-SIZE CARTONS EMPIRE COULD MAKE IN JUST ONE DAY!

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Packaging and Selling

American vs. French Perfumes

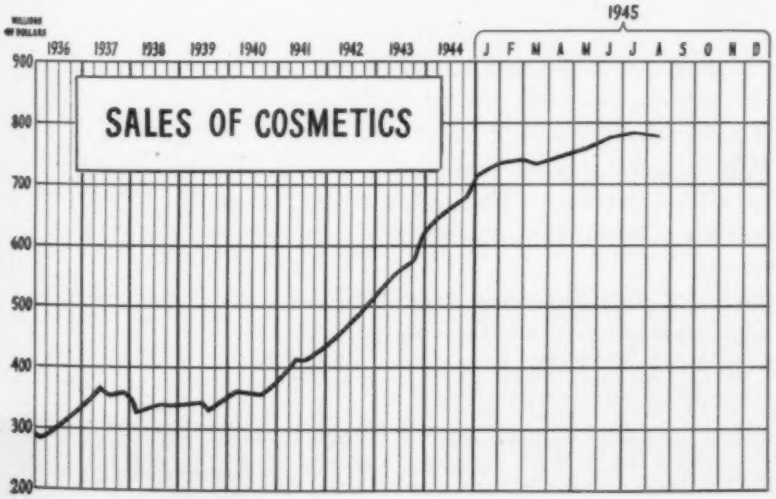
Those who have writhed under the apparent inferiority complex of certain American fashion and perfume authorities as they have groveled at the feet of Parisian products, will take comfort in the letter which follows. It was written by Francois Nazare of Parfums Weil, who has been carrying the torch for American perfumes and who finally exploded when one of the fashion magazines said, "be patient yet a little longer. Imported perfumes will not be coming over for some time to come. . ." Mr. Nazare writes that "Whereas we realize that on the other side of the river the grass looks always a little greener, we do think that the time has now come when the people of this country, particularly those whose job it is to know what they write about, should be told that there is not now very much difference between what is manufactured abroad and what we produce here.

"Since the last world war, this country has made tremendous strides in the world of fashion and contrary to what one is lead to believe, if the French influence has been important (and happily so) throughout the world, the American influence has also made itself felt deeply and to great advantage. In fact, unbelievable as this may appear to be, the Parisienne had been getting, in pre-second-world-war days about as much from her American sister as our own girls have received from her. She read our fashion magazines and her own precious 'Jardin des Modes' belonged to Conde Nast U. S. A.

"American influence has been felt strongly in Paris not only in matters pertaining to home life, which has reflected profound changes in the last few years, but also in art, literature, music, fashions, beauty preparations and perfumes. American advertising firms had agencies in Paris where many an American manufacturer had a branch, shop, or salon. Elizabeth Arden, Ernest Shilling, George Gershwin, Dick Rodgers, Irving Berlin, Heminway, Gertrude Stein, Epstein are known to Paris and there are a good many others more representative perhaps than these few which happen to come to our mind just now! In fact we may even add, in passing, that the language of Paris itself, has reflected lately American influence particularly when at play. There is, therefore, no doubt in our mind of the importance of America today in every field of endeavor (including perfumes)—the reason for this being that the American market, representing a tremendous outlet with a high dollar value could not be ignored by French manufacturers who like everybody else felt the impact of their best customer and did everything in their power to keep him happy.

"Since 1918 the artisans have slowly disappeared everywhere from the field of production. Merchandise is mass produced abroad as it is everywhere else in this democratic, mass-conscious world. This is true of most things and includes, indeed, perfumes We do not know of any successful French perfume line who has limited its distribution to France alone and kept its production and profits down for purely aesthetic reasons. Any article abroad showing signs of success eventually comes here to be released either through a local agent or through an agency set up by the French office. Competition here soon forces the newcomer to do in Rome as Romans do and the original French creators go then for policies which would have seemed unacceptable and revolutionary to them a little while before, and this in order to protect not only their immediate interests here, but that they may enjoy eventually what will soon become their major source of income. This is the first step in their Americanization. Soon the American and the French will work together, giving each other the benefit of their own experience and it will then become impossible to establish a real line of demarcation between the American quality and the French quality of that particular item. What is more, should a difference be found between the two products, we would feel that American merchandise has somewhat the edge over the "imported" product, not only because the present type of production necessitates attention, constant checking, discipline, method and many other characteristics that are not as yet known to be Latin, but because salaries and labor conditions are, for the time being, better here.

"Raw materials in general, and essential oils in particular, are available to all countries with money to spend and of course to America who tops the list. French suppliers have their agencies here, in fact with plenty of merchandise to sell. To assume that perfumes cannot be made in America because we lack the oils is childish. A perfume is



Retail sales of cosmetics for the twelve months ended with August 1945 totaled $779,600,000. This compares with $783,000,000 for the twelve months ended with July 1945 and with $662,448,000 for the twelve months ended with August 1944.

$20,000 OF PENICILLIN IN A $4.00 PYREX BOTTLE

Four Sizes—One Quality
Pyrex Solution Bottles (plain) are available in four sizes—2½ gallon, 3½ gallon, 5 gallon and 12 gallon. The smaller sizes are conventional bottle shape while 5 gallon and 12 gallon are similar in design to carboys. All necks are tooled for uniform stopper fit and increased mechanical strength. The glass is "Pyrex" Chemical Glass No. 774.

Manufacturers of penicillin and other precious drugs cannot gamble with contamination. Their valuable products must be protected every step of the way. That is why so many pharmaceutical houses, particularly in the biological field, have standardized on Pyrex glassware not only for their laboratories, but for manufacturing as well. Take the five gallon Pyrex bottle for example. It resembles an ordinary carboy but there the similarity ends. For this bottle is fabricated from Pyrex Chemical Glass No. 774, the same glass that is used in Pyrex Laboratory Ware, non-contaminating, extremely resistant to all reagents (except HF), capable of repeated sterilization without clouding. It is blown with uniformly heavy walls for added sturdiness. This combination of balanced properties makes it ideal for solution preparation, for filtering, for filling reservoirs and for storage.

Pyrex bottles are only a few of the many standard items in the Pyrex Pharmaceutical line. Write for further information or send in your special problems. Corning Research and "know-how" is at your command in developing glass containers to meet your specific needs.

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The Cosmetic Trend

Small town drug and department stores are beginning to feel the effect upon cosmetic demand of the return of the ex-service men and out-of-their-jobs war workers, both women and men. Soldiers and civilians alike they are stocking up and they are doing so with necessities as well as luxuries. Men are buying shaving utensils and soaps at their first call. Women are in the market for the better grade soaps, hand and face creams, and there is a good call for foot aids. The tendency is decidedly in favor of the better grades and most stores are selling above usual quantities of high grade perfumes, toilet waters, etc. Lipsticks and make-up are bought in wider variety as the new articles become available. Right now stores have a fairly extensive demand for men's toilet goods in luxury and gift packages supported largely by women purchasing for returning ex-service men.

Buyers are inclined to think that this gift slant of the men's cosmetic market will carry certainly up to Christmas and will continue for a while after, as men's cosmetics win their place upon the gift shopping list for men. However, stores seem to note that men have developed a sense for quality of their own. In the smaller towns at least men, buying for themselves, will generally accept the decorative package only when it is tied to a known quality-line or heavily advertised. PX-availability is still playing a large part in the choice for a cosmetic by the average ex-service man. It makes it appear that the efforts of the cosmetic manufacturers to keep their lines prominently represented in PX-stores during the war have not been wasted in terms of post-war publicity.

Talking still of the small town; if any proof should be wanted of the speed with which the nations' cosmetic counters are regaining their peace-time appearance it is to be found in the early return of accustomed seasonal practices.

The first cool days in early October reminded buyers that the winter would soon be here and that their customers will be in the market for cold weather cosmetics. This means lip pomades, hair aids, skin protectives, chapped skin remedies and a great many other articles which are straddling the borderline between the drug and cosmetic counter.

Apparently the return of peace has not brought any noticeable change in the cost expectation of the average small town customer. Most of the drug and independent department stores are carrying the same proportion of higher grade merchandise today as early in the year. The more recent window displays have generally favored quality lines of above average price limits. Habits of buying larger quantities, acquired during the war, are not so set any more. The consumer believes that shortages will not recurr while the growing variety of the assortments encourages greater selectiveness in the home-stock of cosmetics. More gas is enabling women to make more frequent shopping trips which makes for an increase in floor traffic and a, correspondingly, larger number of small sales. As the result the size of the individual checks may be somewhat smaller although there is every indication that volume will increase.

Most stores in the smaller cities are adding to their sales personnel. in the case of drug stores it frequently means that one sales girl is definitely located at the toilet goods counter while formerly she had to take charge of several departments.

All in all, it looks like good business for the cosmetic industry in the rural sections and small market towns of the nation.

not made from oils produced in one country to the exclusion of other oils produced in other countries, and the French perfumes are no exception to this rule. If they include French oils they also include bouquets, innumerable ingredients from all over the world, and also chemicals. We have here a list of 88 countries from which essential oils are imported and the French use these oils the same as we do. To say that because some jasmine grows in Grasse (France) there are no good perfumes outside of the French is a serious mistake, because that same jasmine is also available to us in America who can use it if we choose, because there are other jasmines (and good ones) in this world besides the ones in Grasse, and because without any jasmine at all it is quite possible to make a good perfume.

"Many a good perfume has been made here and it is time for the American people to know it.

"We believe in France. We believe in France not only because we were born, raised and educated there, but because we are familiar with the profound influence that that wonderful country has had in the history of the world and its civilization. We know that France will come back and will send us again many beautiful things. But we also know, however, what we owe the U. S. A. and we see no reason to apologize for our decision to come here from France many years ago and for staying here ever since. Frenchmen, who like ourselves come to these shores, do not lose their personality, their education or their culture on the way over. They did not sever the source of their original knowledge, nor stop corresponding with their friends, nor did they lose their taste. Quite to the contrary, and in addition, they were given here many facilities to work with—this whether they came as laborers, working men, scientists, or with an intellectual turn of mind. They were given the means to succeed here and the tools to work with. Above all, they were taught the meaning of what is perhaps the most beautiful word in the American language, the word 'understanding.'

"In conclusion, to take for granted that American perfumes have to accept a back seat and assume beforehand that they must play second fiddle to 'imported' talent is not only contrary to fact, but somewhat bad taste at this time. It is true that many a wonderful fragrance has come from Paris and many an exquisite package has reached us from the Champs Elysees, but not all French perfumes have been good and not all French packages beautiful. We of Parfums Weil, whose policies have never changed, are deeply conscious of our own talent and tradition, we pride ourselves on our right to choose, and we will bow to beauty only when we find it, be it here or abroad."

Demonstrator Discrimination

The Circuit Court of Appeals of the Eighth Circuit has handed down a decision in one of the few cases in the cosmetic field involving an interpretation of the Robinson-Patman Act. The case involved Elizabeth Arden who was sued by Blass Co. of Little Rock, Arkansas, under the "proportionally equal terms"

Rex is a new line of toiletries for men presented by Prince George, Ltd. A seal of white ceramic porceline individualizes each Rex package.

clauses of the Act. The latter was awarded triple damages involving the difference between compensation paid by Arden to a demonstrator in Cohn Co. of that city, and compensation paid to the demonstrator in Blass Co.

Blass was the owner and operator of a department store in Little Rock, Arkansas, which had a toilet-goods department. In August, 1938, Blass took on the Elizabeth Arden line of products in its store, under an oral agreement with Arden as part of which the latter was to designate one of the salesgirls in the toilet-goods department as an Elizabeth Arden "demonstrator" and was to pay or reimburse Blass for one-half of her regular $20-a-week salary. The arrangement for partial payment or reimbursement of a salesgirl's salary, or for partial furnishing of her services, remained in effect for approximately two years, at the end of which time Arden decided to discontinue selling further Elizabeth Arden products to Blass and to give M. M. Cohn Co., another department store in Little Rock, the right of exclusive local representation.

Lightfoot Schultz requisites for men are called Royal Oak. Subtly scented, Royal Oak products come in modern containers of pickled oak and glass.

Cohn Co. had for some years previously been handling the Elizabeth Arden line and continued to do so during the time that Blass also was selling the products. This fact Blass knew and had understood at the time. Arden did not inform it, however, that the arrangement which existed between Cohn Co. and Arden all during this time was that Arden, instead of paying or reimbursing Cohn Co. for half of a clerk's salary or furnishing half of a clerk's services, was making an allowance to Cohn Co. of $20 a week, or in other words was providing the entire salary or services of the demonstrator.

The purpose of the suit was to recover three-fold the difference between the amount of the allowances made or the value of the services furnished to Cohn Co. and those made or furnished to Blass during the period that it purchased and sold Arden's products, on the theory that Arden had failed to pay the salesgirl's salary on proportionally equal terms with Cohn Co., and that it had been pecuniarily damaged by such discriminatory treatment to the extent of the difference in these amounts or values.

The trial court found that "the defendant (appellant) discriminated in favor of M. M. Cohn Company against the plaintiff (appellee), both of whom bought commodities from the defendant for resale, by contracting to furnish or by contributing to the furnishing of services and facilities connected with the sale and offering for sale of such commodities so purchased from the defendant, such discrimination consisting of the payment of the entire salary of defendant's representative in the M. M. Cohn Company store and one-half salary to the defendant's representative in the plaintiff's store;" that "had the defendant paid the plaintiff or allowed the plaintiff credit for the entire salary of its demonstrator or representative in the plaintiff's store during the period of 101 weeks * * * the cost of the operation of the plaintiff's cosmetic department during that period of time would have been reduced at the rate of $10.00 per week, or an aggregate of $1,010.00;" and that "the plaintiff has accordingly been damaged to the extent of $1,010.00 on account of the increased cost of the operation of its cosmetic department as a result of the discrimination."

King of Hearts is the name of the men's toiletries being sponsored by Maria Danica. The packages carry a label suggesting a playing card.

In the calendar year of 1938, Blass bought $5,117 of Arden merchandise to Cohn's $3,834 and the court pointed out that the respective figures had no bearing, in any case, because the amount of salesgirl's compensation was arrived at by individual agreement and there was no provision for graduating it to the amount of goods purchased during any period. In addition the records showed numerous instances of full allowances of salesgirl's salaries in other cities throughout the country whose purchases have been less in amount than those of Blass. They also showed different allowances to customers in the same cities whose purchases had been practically identical in amount with each other.

Another new men's toiletries line is the Commodore Vanderbilt, introduced by Lucretia Vanderbilt, Ltd., packaged in nautical fashion.

No matter where you put them

Coated Lithwite Cartons

SPEAK UP... AND SELL

THEY HAVE THE EDGE ON THE OLD "SILENT SALESMAN" TYPE OF PACKAGE

WHETHER YOUR PRODUCT is advertised, or not advertised, better display at the point of sale helps make *more* sales . . . and folding cartons of *Coated* Lithwite give products *outstanding* display. And why? Because this revolutionary, machine-coated paperboard makes pictures and colors more eloquent, gives voice to your sales story.

Smooth, velvety *Coated* Lithwite cartons have a quality look and feel. But more important, product pictures on these finer folding cartons stand out with a color brilliance and realism that implants a buying urge.

Deliveries . . . when? We wish we could say. But right now our carton plants are producing to capacity, and the backlog of orders is the greatest since we pioneered *Coated* Lithwite six years ago. Here's a suggestion: Get in touch with a Gardner-Richardson sales representative and discuss the matter of future delivery on *Coated* Lithwite cartons.

Note These Outstanding Coated Lithwite Advantages

Made by a revolutionary process. *Coated* Lithwite is the brighter, whiter paperboard that is formed, made and coated in one high-speed operation. Proved and improved for six years.

Means more eye-appealing cartons. *Coated* Lithwite has a smooth, rub-resistant, chalk-free surface. Forms a better base for printing inks and plates—reproduces even the smallest type cleanly, crisply. Brings colors up brilliantly—gives halftones a sharp realism.

Fewer jammers and leakers. *Coated* Lithwite scores without flaking or shattering. Takes a positive, tight seal.

The GARDNER-RICHARDSON Co.

Manufacturers of Folding Cartons and Boxboard

MIDDLETOWN, OHIO

Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT

Smart Designs for Selling

PACK TO ATTRACT IN

Maryland Glass

MARYLAND GLASS CORPORATION, BALTIMORE 30 . . . 270 BROADWAY, NEW YORK 7 . . . BERMAN BROS., INC., 1501 S. LAFLIN ST., CHICAGO 8 . . . J. E. McLAUGHLIN, 401 LOCK ST., CINCINNATI 2 . . . ALLER TODD, 1224 UNION AVE., KANSAS CITY 7 . . . S. WALTER SCOTT, 608 McCALL BLDG., MEMPHIS 3 . . . H. A. BAUMSTARK, 4030 CHOUTEAU AVE., ST. LOUIS 10 . . . OWENS-ILLINOIS GLASS CO., PACIFIC COAST DIVISION, 135 STOCKTON ST., SAN FRANCISCO 19.

Corday has introduced Frenzy, its first perfume since pre-war days. Frenzy is a sultry scent packaged simply and effectively.

Parfums Hartnell offers a trilogy of new perfumes—Bright Stars, Stolen Heaven and Gay Glitter, in three color combinations.

The Debuelle charm set is one of sixteen different gift sets of cosmetics and toiletries for little girls from 5 to 12.

Add Men's Lines

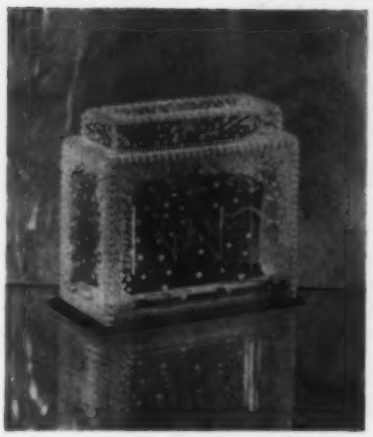
New men's lines are still breaking in great profusion on every side. The latest we heard about was one for the beauty shop field based on the theory that, if given any display, women would see them, think of gifts, and buy them for their men. It's an angle!

Another angle has been supplied by Adam Hats in the N. Y. "Times." This account says that following a two months' test of merchandising men's toiletries in its Ohio stores and agencies, Adam Hat Stores, Inc., will place the items in all of its outlets.

In explaining the addition of the toiletries, sold under the Norwood label, William Pludo, vice president and sales manager, said that the organization is attempting to merchandise on a national scale popularly priced items, minus fancy packaging. Most toiletries sold in men's wear stores, he declared, "are higher priced items, not purchased by the buyer for his own use, but as a gift. The Adam plan confines individual items to a maximum of 50 cents, which means that the buyer will use it for himself, and when he wants a replacement will drop into one of our stores or agencies for it. That's when we expect to make an extra sale of a haberdashery item."

New Fragrances

New Fragrances have already started to hit the market and any day now there will probably be an avalanche. Corday seems to be among the first to introduce a new French perfume, a sultry scent, which is called Frenzy. Frenzy is packaged simply but effectively and comes in four sizes ranging from ½ ounce at $10 to four ounces at $65. Taglio is a new perfume by Lucien Lelong. Taglio is a sparkling perfume full of mischief and magic, packaged somewhat elegantly in an oblong bottle, set in a transparent, frosted box that has a clump of flowers *sous cloche*. Innuendo is a new number being featured by Roger & Gallet in an attractive bottle carrying a surrealistically designed label. The bottle is one that distinguishes other Roger & Gallet fragrances. Parfums Hartnell offers a trilogy—Bright Stars, Stolen Heaven and Gay Glitter—which carry the Hartnell Golden H trade-mark in three color combinations. Bright Stars is a delicate fragrance which rests on a golden pillow in a white satin and gold-trimmed package. Stolen Heaven, a persistent scent, comes in a blue satin box, while Gay Glitter, lingering and feminine, appears in a fuschia package.



Taglio is a new perfume by Lucien Lelong packaged in an oblong bottle which is covered with a transparent, frosted box.

Dorothy Gray offers In the Pink, an appealing bath sequence scented with a fresh, spirit-lifting fragrance, and gaily packaged.

Mine Alone is a new cologne created by the Junior Guild for the young sophisticate who likes an expressive scent to match her clothes.

Hands demand
what eyes select...

A multitude of eager, searching, wanting hands are reaching out toward the tempting arrays of long awaited products on American counters.

The hands desire . . . the products . . . but the eyes select.

The eyes are hungry, hungry for beauty, for charm, for the original and unique. They're searching eyes but they're calculating too. They compare and judge with caution and care, for their expectations are as high as their urging desire is great. As their decision is made . . . the hands demand.

Now, we ask, will it be your product that those eager hands claim? Will it be your product that holds selecting eyes in a bond of beauty and charm and with a promise of desires fulfilled?

If your product has been appareled and packaged by WARNERCRAFT you may rest content . . . for a multitude of wanting hands . . . strong hands, fragile hands, hands beautiful, hands possessive, will demand the product that you present.

WARNERCRAFT

"THE FINEST WORD IN PACKAGING"

Makers of set-up and folding boxes of all types, transparent acetate containers, hand made specialties, counter displays and dispensers.

THE WARNER BROTHERS COMPANY

Main Office and Factory: 325 Lafayette Street, Bridgeport, Conn.
New York Sales Office: 200 Madison Avenue, New York, N. Y.

Back to Tin?

(Continued from page 621)

"Current demands for tin by civilian industries manufacturing such products as automobiles, refrigerators, washing machines, electrical appliances, tin cans, radios, etc., are well in excess of supplies of tin freed by cutbacks in military programs. At the same time, the tin stockpile has been drawn down sharply, and no new sources are immediately available as a result of the termination of the war.

"To add to the problem, the reconstruction needs of Europe must be met of wartime supply sources. As a result, it is likely that U. S. imports of tin during the immediate post-war period will not be so great as they have been in war years. This condition is likely to continue until the tin properties in the Far East are rehabilitated and supplies are once again flowing from those areas to consuming countries.

"The difficult problem of procuring mining machinery and equipment to be installed in the Far East is complicated by the temporary lack of knowledge of the extent of destruction of the equipment which was in place at the outbreak of the war. It is possible that stocks of tin metal and concentrates may be found above ground in producing areas as well as in Japan, but it would be hazardous to plan reconversion policies on the basis of such a guess."

Tin consumed in the manufacture of collapsible tubes declined sharply from 1941 consumption through the war years. In 1941 consumption for tubes was 4,445 long tons; for 1942, 1,099 long tons; for 1943, 602 long tons; for 1944, 502 long tons, and for the first half of 1945, consumption was at the annual rate of 486 long tons. During these years total consumption of tin in this country in long tons stood at 135,789 for 1941; 86,096 for 1942; 81,840 for 1943; 90,352 for 1944, and at an annual rate of 94,192 for the first six months of 1945.

Consumption of tin for the manufacture of foil during those years in long tons stood at 4,292 for 1941; 576 for 1942; 371 for 1943; 382 for 1944, and at an annual rate of 384 for the first six months of 1945.

While it can be seen that tin consumed for the manufacture of collapsible tubes in normal times was only about 3 per cent of the total consumption in this country, there raises the question of whether or not manufacturers of tooth pastes, shaving creams, and similar items will ever go back to pure tin tubes for the packaging of their products. For during the restrictions of the war period tube manufacturers were able to develop alloys and coatings that permitted them to do away with tin altogether in many instances. Also the nice bright appearance of a tin tube was quite well duplicated in some of these alloys. The tube manufacturers and the large consumers of tin tubes for packaging always resented being under the control of the tin monopoly of the British and the Dutch and they do not want to place themselves under this yoke again if it can be avoided.

Savings of a dollar a gross were possible in the cost of these wartime tubes as compared with the cost of tin tubes. The tin market has fluctuated over a wide range in years gone by and will be likely to fluctuate again so that users of pure tin tubes are not able to estimate costs over a long period unless they buy tin far into the future and this is quite speculative. While it is possible for most users of tubes to use pure tin tubes at the prices which prevailed over the past years, there is no reason to expect that these users will want to go back to higher priced containers if the ones they have been using during the war are entirely satisfactory. After a manufacturer using some 500,000 gross of tubes for tooth paste, shaving cream, or similar items, will be strongly influenced by the $550,000 saving resulting from the use of these newer tubes as compared with pure tin tubes. A saving of this kind at a time like this will do a lot to overcome the effects of increased labor costs and other cost increases.

Pure tin tubes will naturally continue to be used for certain pharmaceutical preparations as they have been all during the war. But it seems likely that many manufacturers who used pure tin tubes for other preparations will be hesitant about reconverting to the use of tin. So long as the alloys and coating in use prove entirely satisfactory from the viewpoint of use, appearance, and prove free of contamination of the products packaged in them, there is no valid reason to change back to higher-priced tubes made of pure tin.

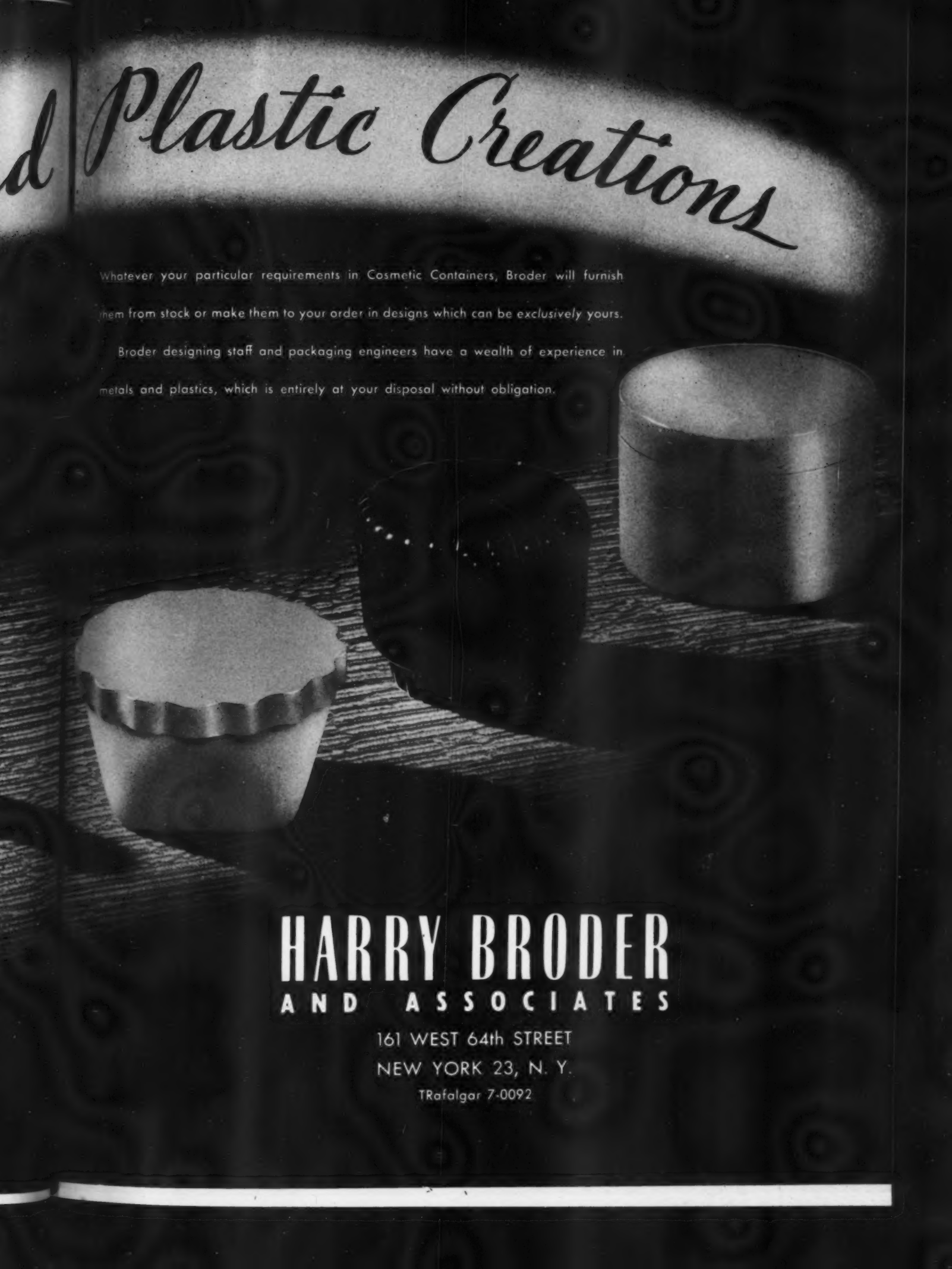
STAINLESS TAR: Some time ago in your "Readers' Questions" section, you gave a formula for a stainless coal tar. Several of my clients are very much interested in products containing such a material. Unfortunately, I have not been able to locate the issue in which the formula appeared, and I would greatly appreciate knowing its composition. Kalamazoo.

A synthetic coal tar has been described in several sources. Perhaps the one you have in mind and which appeared in our publication is a base made as follows:

Anthracene	**1.10**
Naphthalene	**10.90**
Phenanthrene	**4.00**
Carbazole	**2.30**
Picolene	**0.58**
Pyridine	**0.58**
Quinoline	**0.58**
Phenol	**0.70**
Cresol	**0.75**
Petrolatum to make	**100.00**

This synthetic tar may be used in various preparations in the same amounts as crude coal tar.

Broder Metal and


d Plastic Creations
Whatever your particular requirements in Cosmetic Containers, Broder will furnish
hem from stock or make them to your order in designs which can be exclusively yours.
Broder designing staff and packaging engineers have a wealth of experience in
metals and plastics, which is entirely at your disposal without obligation.
HARRY BRODER
AND ASSOCIATES
161 WEST 64th STREET
NEW YORK 23, N. Y.
TRafalgar 7-0092

Better line coordination from CENTRALIZED RESPONSIBILITY

A GOOD football squad scores gains because it works as a team—with responsibility for its coordination centralized in the quarterback. Your packaging lines will function more smoothly, gain more production when responsibility for the "team"—the container and closure—is given to one reliable firm.

Anchor Hocking offers you a dependable source for the perfect "team"—Anchorglass containers and matching custom-fit Anchor Caps.

For trouble-free glass containers with accurate capacity and finish, with extra strength to resist production line and shipping knocks—for caps that go on fast, seal perfectly and keep your product in top condition—for coordinated supply—you can rely on Anchor Hocking.

Tune in "Hobby Lobby" every Thursday Evening, entire Coast-to-Coast Network, CBS.

Anchor
CONTAINERS and CAPS

PRODUCTS OF
ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO

Plaskon MOLDED COLOR CLOSURES

on America's Finest Merchandise

SMART APPEARANCE is one of the biggest sales-promotion requirements in the packaging of retail drug merchandise. And the packaging material must have high utility value to meet varied physical characteristics of drug products.

Both essentials of smartness and utility are met by the many features of Plaskon Molded Color, now being used for closures and containers on thousands of items by manufacturers in every branch of the drug trade field.

Plaskon is a plastic molding material available in a wide range of permanent colors, that will harmonize with every product need. It can be molded into unusual shapes and designs, to secure eye-catching distinction for your product.

Plaskon is completely impervious to the effects of alcohol, acetone, or other common organic solvents. It is not affected by oils and fats; is odorless, tasteless and inert. For safe, attractive containers and closures for your merchandise, ask your molder to demonstrate all of Plaskon's advantages.

PLASKON

TRADE MARK REGISTERED

MOLDED COLOR

PLASKON DIVISION, Libbey • Owens • Ford Glass Co. • 2110 Sylvan Ave., Toledo 6, Ohio

Canadian Agent: Canadian Industries, Ltd., Montreal, P. Q.

a little BARIUM
helps to make glass brilliant

IN glassmaking, as in cooking, it's the little extras—the dash of this and the pinch of that expertly blended—which often make the difference between ordinary glass and top-quality ware.

For example, just a small amount of barium in the glass batch can make a big improvement in the quality of the finished container. It increases the brilliance and sparkle of the ware and helps make it tougher. An active aid to melting, it permits the use of lower, more economical furnace temperatures and helps remove gases from the melted batch.

But barium is expensive—and consequently more generally used in making optical glass than container glass. However, through long experience and extensive research, Armstrong's glassmakers have learned how to use barium to improve the quality of Armstrong's glass without increasing the cost of the finished ware. Their success is one of the big reasons why Armstrong's glass enjoys its nation-wide reputation for top quality.

For additional interesting stories about the skills and experience that go into the making of fine glass, send for your free copy of Armstrong's illustrated booklet, "Men and Glass." Write to Armstrong Cork Company, Glass and Closure Division, 3811 Prince Street, Lancaster, Pennsylvania.

ARMSTRONG'S GLASS

and

ARMSTRONG'S CLOSURES

PROOF! This "Stratosphere" test devised by Alcoa packaging engineers clearly demonstrates that heat-sealed Alcoa Aluminum Foil packets are 100% airtight and moisture-proof. Packets are immersed in water in a covered jar. Vacuum is drawn until the pressure *outside* the packets is reduced to that at 47,000 feet above sea level. Then the process is reversed, bringing external pressure "back to earth". The contents remain dry, proving that no moisture is sucked in through the foil or through leaks in the sealed edges.

A sure way to

KEEP YOUR POWDER DRY

How *sure* do you want to be that moisture-vapor will not get into your product?

If you need the *utmost* protection for a dry powder, a heat-sealed packet made from Alcoa Aluminum Foil will give it to you. It will keep hygroscopic powder dry for months.

These packets are easy to open and use. The correct amount of powder for use at one time can be packed in individual packets and sold in cartons containing as many unit doses as you wish in a package.

Eye-appeal is another advantage. By combining colorful printing with the natural sparkle and glamour of foil, a package of striking beauty and high attention value is achieved.

Automatic machines fill and form these packets at high speed. Thus, production costs are low.

No longer restricted to war packaging jobs that it did so surprisingly well, Alcoa Aluminum Foil is now freely available for this and other types of packages for drug and cosmetic products. Write ALUMINUM COMPANY OF AMERICA, 1913 Gulf Building, Pittsburgh 19, Penna.

ALCOA

ALUMINUM

ALCOA ALUMINUM FOIL

HAVE YOU CHECKED YOUR BOTTLING COSTS RECENTLY?

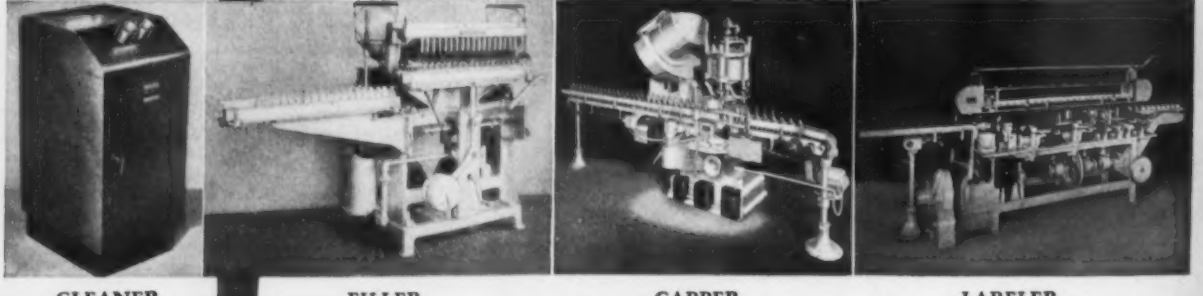
In these busy times with manpower shortages, it is difficult to control bottling costs. But the successful concerns will be those who start now to plan for "Lower Cost Per Container" production in the days of keen competition that lie ahead.

Bottling machinery that will produce at Lower Cost Per Container is a constant objective at Pneumatic. Proof of this lies in the performance records of the hundreds of Pneumatic machines operating in the field today.

More production
Less time out for adjustments
Smoother machine performance
Lower maintenance cost
Greater dependability
Longer machine life

} **All of these add up to higher efficiency resulting in "Lower Cost Per Container"**

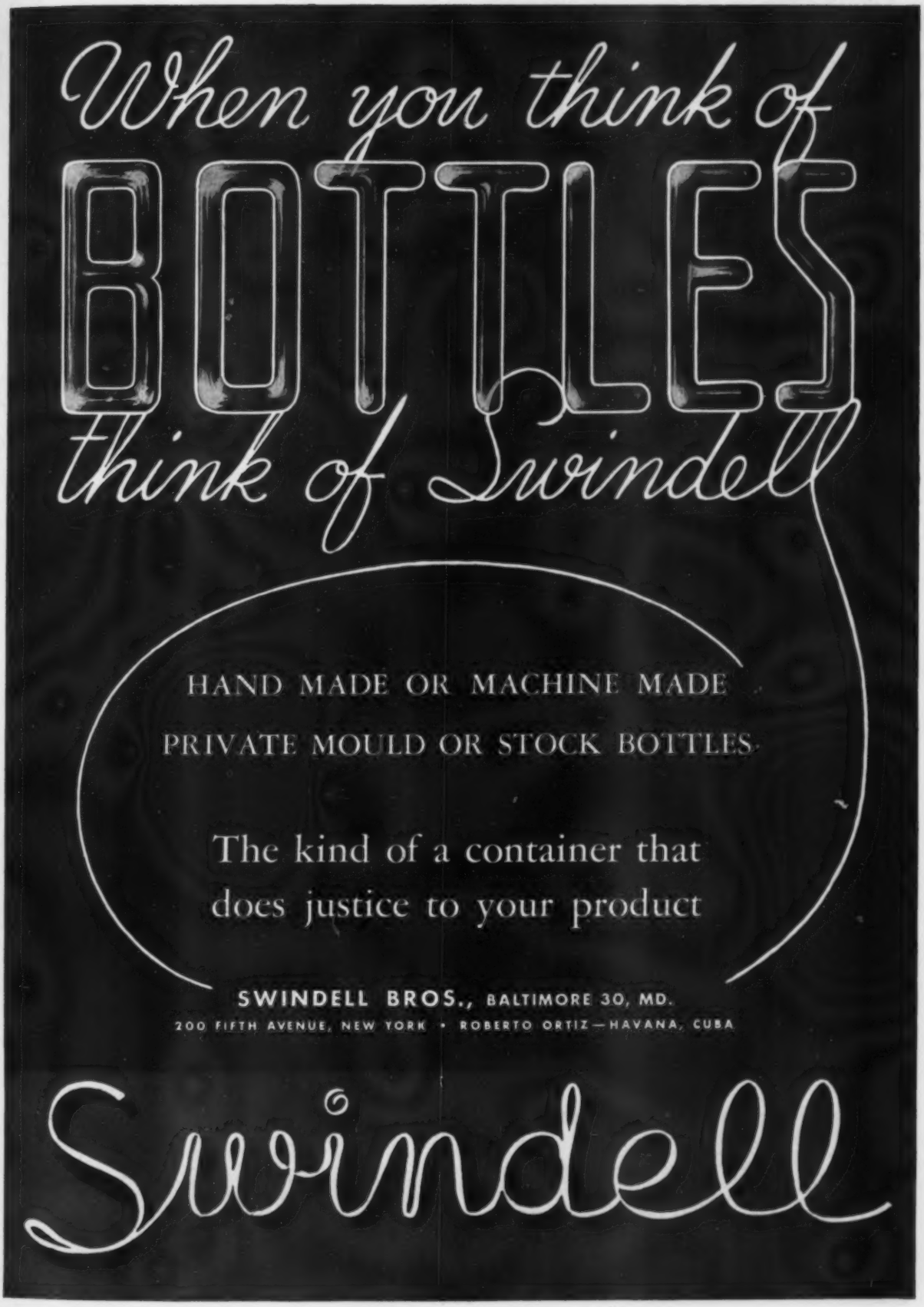
Plan now for the future. Consult Pneumatic and *get the facts* on their complete line of Cleaning, Filling, Capping, and Labeling machinery. PNEUMATIC SCALE CORPORATION, LTD., 70 Newport Avenue, North Quincy 71, Mass. *Branch offices:* New York — San Francisco — Chicago — Los Angeles.



CLEANER **FILLER** **CAPPER** **LABELER**

One of several machine combinations offered by Pneumatic

PNEUMATIC
PACKAGING & BOTTLING MACHINERY


When you think of
BOTTLES
think of Swindell
HAND MADE OR MACHINE MADE
PRIVATE MOULD OR STOCK BOTTLES
The kind of a container that
does justice to your product
SWINDELL BROS., BALTIMORE 30, MD.
200 FIFTH AVENUE, NEW YORK • ROBERTO ORTIZ—HAVANA, CUBA
Swindell

Seamless - Shatterproof
Plastic CONTAINERS

WITH *PEACE* AT HAND, HERE ARE PLASTIC PACKAGING FEATURES YOU CANNOT OVERLOOK—

EYE APPEAL: Lustrous, crystal-clear visibility permits full view of contents; keeps its contents untouched by shopping fingers . . . And where over-all labeling matter or protective coloring is required, any color or tint is available.

PROTECTION: Seamless, *shatterproof* protection of Clearsite containers means your package will withstand more than ordinary usage.

IMPRINTED LABELING: Full space of container, or a few simple lines identifying your trade name is permanently imprinted, during manufacturing process.

RESILIENCE DEFIES BREAKAGE

The resilience of CLEARSITE *plastic* containers "gives" under pressures which would shatter ordinary glass . . . and that resilience often serves as a dispensing means where powder or oils are packed.

FEATHERLITE: Clearsite is 80% lighter than glass—and far more durable. It affords great economies in shipping and "protective padding," too!

These important factors are features of

Clearsite®

Write for Complete Details

® Reg. U. S. Pat. Off.

CELLUPLASTIC CORPORATION

CELLUPLASTIC CORP.

PLASTIC CONTAINERS AND PLASTIC PRODUCTS

60 AVENUE L NEWARK 5, N. J.

NEW YORK OFFICE - 420 FIFTH AVENUE WEST COAST CONTAINER SERVICE COMPANY LOS ANGELES 27 CAL

"I'VE ALWAYS WANTED AN ORIGINAL DUNCAN PHYFE"

Back in the early part of the 19th century, lumbermen away off in Honduras selected their finest Mahogany trees and marked them "Phyfe Logs"! These trees were reserved for one of America's foremost furniture builders . . . Duncan Phyfe. The delicately proportioned designs and dependable quality that Duncan Phyfe built into each piece of furniture won him widespread fame. He has the unique distinction of being the only American for whom a furniture period has been named.

Carr-Lowrey has become one of the foremost names in the field of fine American glass containers. More than 56 years of devotion to the highest standards in glass manufacture has made the name Carr-Lowrey respected and trusted by quality-minded buyers.

CARR-LOWREY GLASS CO.

Factory and Main Office: BALTIMORE, MD. • *New York Office:* 500 Fifth Ave. • *Chicago Office:* 1502 Merchandise Mart

Top Brands

Put Brands on Tops

THESE are just a few of the Milbossed-Top Corks Dodge has designed and manufactured for leading producers of bottled products.

Besides meeting the requirements for dependability and safe-sealing, these efficient, economical closures have provided that extra sales appeal—so necessary for maintaining "popular brand" status.

Dodge—specialists in cork closures since 1880—has helped to put numerous leading brands on top. We would like to help you put your brand there—on top of the bottle and on top of the market.

DODGE CORK COMPANY, INC., LANCASTER, PA.

Where "package appeal" is less important, use Dodge Taper Corks. The Dodge system of grading cork assures you of exceptionally uniform quality. For price quotation and delivery date, send us your specifications as to size, shape and quantity wanted.

DODGE CORK *Closures*

Designed to Guard the Integrity of the Contents

Fontaine Announces
BRASS LIPSTICK CONTAINERS
and new styles in
All-Plastic Lipstick Containers
Medium and jumbo lipstick containers
All brass
Combination brass and plastic containers
Various styles
ALL-PLASTIC LIPSTICK CONTAINERS
Swivel container — medium and jumbo sizes.
Small container for medium size lipstick.
CAPS AND CLOSURES
Ball caps, 18-20-22 mm.
Straight caps, 18-20-22 mm.
standard GCA threads.
Wood closures for men's and
women's toilet waters.
Others in all sizes and colors.
DECORATIVE PROCESSES
Silk Screening, Gold Leaf Printing
and Spraying. Designs created.
"MIRRO-METAL" FINISH
An exclusive Fontaine mirrored metallic
process in gold, silver, and
sparkling colors on glass,
plastic and base metals.
FONTAINE PRODUCTS CO.
ART IN PLASTICS
306 EAST 61st STREET, NEW YORK 21, N. Y.

TIME
Plastics for swanky clocks.....Heavy-duty pails
Cans with labels lithographed.....To increase product sale
ALL ARE MADE BY CONTINENTAL CAN COMPA
It takes a lot of men and women (25,000, to be exact) to plan and make all the different products that carry the "Triple-C" trademark.
Some run high-speed machines. Some work with test tubes. Some are engineers. Some are lithographers. And a good number (about 20%) have been fighting for us all over the world.
We hope these veterans are coming back to the Continental family, to make products for your health, welfare and happiness. Keep your eye on Continental and on the Continental trademark. You'll be seeing the Triple-C more and more in industry and in your home.
★ ★ SALVAGE EVERY TIN CAN ★ ★
KEEP YOUR EYE ON CONTINENTAL — FOR PACKAGING AND
Here's another in the latest series of Continental advertisements running in full color in America's leading magazines—*Time, Newsweek, U. S. News, Business Week, Fortune.* Keep your eye on Continental and on Continental's trademark, too! The Triple-C stands for *one* company with *one* policy—to give you only the very best in quality and service.

THE FIRST STEP IN BUYING ADHESIVES

SEND US SAMPLES OF MATERIALS TO BE BONDED

Paisley Scientific Adhesive Service starts work immediately upon receiving samples of the materials to be bonded. Trained Paisley Adhesive technicians scientifically select the one perfect adhesive formula to suit the materials, papers, cartons, etc., submitted. An Adhesive Operation Data Sheet will be forwarded to guide you in supplying us with the information we need. This is the modern way to obtain an adhesive that will give greatest speed and efficiency in your bonding or packaging operations. Start now. Buy your adhesives this new, this *better* way. Write our nearest laboratory for an Adhesive Problem Data Sheet. At the same time be sure to mail the samples of the material to be bonded!

Paisley SCIENTIFIC ADHESIVE SERVICE

PAISLEY PRODUCTS INCORPORATED

Manufacturers of Glues, Pastes, Resin Adhesives, Cements, and Related Chemical Products

1770 CANALPORT AVE., CHICAGO 16, ILL. • 630 W. 51st STREET, NEW YORK 19, N. Y.

"But officer!
All I did was say the store had a new stock of perfumes in these beautiful new, modern Foster-Forbes Cosmetic Bottles."

FOSTER-FORBES
Cosmetic Bottles

FOSTER-FORBES GLASS CO., MARION, INDIANA, U. S. A.

SALES REPRESENTATIVES: KANSAS CITY • CINCINNATI
DETROIT • CHICAGO • CLEVELAND • MILWAUKEE • ST. PAUL • ST. LOUIS
ATLANTA • NEW YORK • MEMPHIS • LOUISVILLE • HAVANA, CUBA

What has *Lynn Merrick** got that ten thousand others *haven't?*

Since Mother Nature has blessed all our womenfolk with the same physical features, it must be *how her features are proportioned* that gives Lynn Merrick that greatest of all box office attractions — *Beauty!*

Package by Ritchie

**Lynn Merrick,* in the Columbia picture, "Voice of the Whistler."

AND SO IT IS with packages. For packages of competing products have much the same features. It is the *uncommonly skillful proportioning* of common package features that gives a Package by Ritchie *beauty!* That makes it a *stand-out*—a package people see, ask about, reach for—a package that *sells!*

WAY TO A BETTER PACKAGE

The Ritchie way integrates art and artisanship—to give you a better package at a low unit cost. A package that quickly, unmistakably identifies, fully protects and conveniently dispenses your product. A practical, production-planned package—easy to fill or pack, easy to handle, to stack and display—but *above all* designed for eye-appeal, for quality-impression, for *beauty that sells!*

THE 5 ESSENTIALS OF A SELLING PACKAGE

1 It must be practical, production-planned, economical to manufacture, easy to fill or pack.

2 It must fully protect and conveniently dispense the product.

3 It must be easy to handle, stack, display.

4 It must *proclaim* the quality and identity of your product.

5 It must be good looking, memorable, ATTRACTIVE!

W. C. *Ritchie and* COMPANY

8825 Baltimore Avenue • Chicago 17

SET-UP PAPER BOXES • FIBRE CANS • TRANSPARENT PACKAGES

NEW YORK DETROIT LOS ANGELES ST. LOUIS MINNEAPOLIS

CONSUMER BUYING PROVES EVERY KNOX Container A BOOST FOR ON-THE-SPOT SALE OF YOUR PRODUCT

Consumers are now more value and quality conscious than ever before. They must see the product — be impressed with its quality and quantity. That's why KNOX glass containers have played and will continue to play an important part in helping an untold number of products do their own selling — giving them *eye appeal that means buy appeal.*

KNOX containers not only give your products that on-the-spot buy appeal— they are also sure sanitary protection.

Why hide your products? Give them that extra boost for consumer enticement by packaging them in sparkling KNOX glass containers.

And remember — experienced KNOX technicians are always ready to help you on any of your packaging problems — without cost or obligation.

Send us your requirements. Let us plan with you now on KNOX containers for your products.

KNOX GLASS ASSOCIATES, INC. **Knox, Pa.**

Knox Group Operating Ten Modern Plants Strategically Spotted Throughout the United States

Meritseal—

strikes a responsive note

Meritseal is right in tune with the finest cosmetic packages. Its smart appearance and sparkling colors strike a responsive note in a quality conscious market.

But Meritseal has more than beauty. Its novel construction and unique thread design assure a dependable, air-tight seal. Best of all, the cost is less than many closures of comparable good looks.

See for yourself, right on your own product, how really good looking and efficient Meritseal is. We will be pleased to send you samples and full information. Be sure to mention the size of the caps that will fit your package and the colors you prefer.

CROWN CORK SPECIALTY CORPORATION
DECATUR, ILLINOIS
Division of Crown Cork & Seal Company

IF YOUR PRODUCT COULD TALK.....

If your product could talk, no doubt it would say "Don't fence me in where nobody can see me. If you must package me, please use a container that will protect me and at the same time let me be seen."

Nothing tops Lusteroid in filling these important requisites. These modern plastic vials and tubes are zephyr-light, yet strong, rigid, unbreakable. Their crystal-clear walls provide ideal display. Their wide color range gives the package designer welcome variety. And their printability eliminates label expense. You save money on packing and shipping, too.

Sizes from ¼" to 1¼" in diameter and lengths up to 6". Cork, slip-on or screw-cap closures.

Write for full details today.

LUSTEROID CONTAINER CO., INC.

Formerly Lusteroid Division of Silcocks-Miller Company

Office and Factory

10 W. PARKER AVENUE, MAPLEWOOD, N. J.
MAILING ADDRESS: SOUTH ORANGE, N. J.

Two Proven Winners!

W. BRAUN cut-glass type Decanters have proven to be instant sales winners wherever featured. While we have made some restrictions previously, we can now ship to certain additional territories. Write us your needs over the coming year for full particulars.

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Over 1/3 Century of Dependability

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....LAST WORD IN "ON THE PACKAGE" PRINTING SENDS HELENA RUBINSTEIN'S "HEAVEN SENT" OUT INTO THE WORLD SELF-ASSURED AND LOVELY IN ITS PERFECTION.

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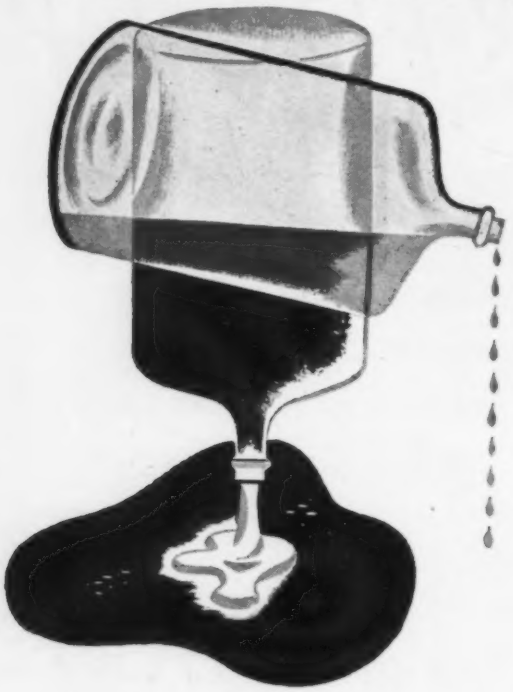
ONE OF 96 DOW CHEMICALS USED BY THE PHARMACEUTICAL INDUSTRY



working with water

"through thick and thin"

answering the problem of water thickeners . . .

Water frequently presents thickening problems when used in making products sold in solution.

Often these products must not only be thickened—sometimes they must also be thinned before use. In both operations, Methocel (water-soluble Dow Methylcellulose) easily meets requirements. Methocel works well with water "through thick and thin."

Take the manufacture of germicidal solutions as an example. For many applications these solutions must be thickened so as to be applied most effectively to a specified area or substance. Germicidal solutions are concentrated, however, and often must be diluted with water to the required strength. Methocel thickens germicidal solutions so that they do not pour too freely. This makes exact dilution easy, so that the germicides are not wasted when used.

This is only one example of an easy and effective application of Methocel, a water-soluble cellulose ether of exceptional purity and uniformity. Methocel can serve you well—as a dispersing, thickening, emulsifying, binding and coating agent. It may be the answer to many of your product problems. You can find out by asking Dow for complete information.

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Methocel

Water Soluble Dow Methylcellulose

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY

NEWS...

Nobel Prize for Penicillin

The 1945 Nobel prize in physiology and medicine will be shared by Sir Alexander Fleming, discoverer of the antibiotic properties of penicillin, Sir Howard Flore, who developed the therapeutic application of penicillin, and Dr. Ernest Boris Chain, professor of chemical pathology at Oxford. Each of the recipients will receive the equivalent of $10,000.

Dr. Coghill Joins Abbott

Dr. Robert D. Coghill has been appointed associate research director of Abbott Laboratories, according to an announcement by Dr. E. H. Volwiler, vice-president in charge of research and development of the company.

Since 1939 he has been chief of the fermentation division, Northern Regional Laboratory, U. S. Department of Agriculture in Peoria, Ill. where he has been intimately connected with various fermentation problems, especially the development of penicillin production.

The Army Air Transport Command brought culture bases of every type to the United States from all parts of the world, and from their study Dr. Cog-

DR. ROBERT D. COGHILL

hill's group developed a medium which gave very high yields of penicillin. Today 90 per cent of penicillin is produced by a descendent of a mold isolated at Northern Regional Laboratory.

Dr. Coghill received his A.B. degree from the University of Kansas, and his Ph.D. from Yale where he served as assistant professor prior to becoming chief of the division of the Northern Regional Laboratory.

John Powell & Co. Elects Officers

John Powell & Co., Inc., New York, has announced the election of the following executive officers: vice-president in charge of research, Dr. Alfred Weed; vice-president in charge of production, W. J. Pollert; vice-president and treasurer, H. Alvin Smith. G. R. Rinke was elected chairman of the board and John Powell was elected president.

Dow Appoints Dr. Behr

The Dow Chemical Co. has announced the appointment of Dr. Arthur Behr as director of aromatics research.

DR. ARTHUR BEHR

Under the new arrangement, Dr. Behr who joined Dow in 1940, will now disassociate himself completely from production and concentrate on research and assisting the trade with technical problems involving synthetic aromatics.

Dr. Flosdorf Joins F. J. Stokes

Dr. Earl W. Flosdorf, for twelve years assistant professor of bacteriology in the Medical School of the University of Pennsylvania, has resigned to devote his full time to the duties of director of research and development for the F. J. Stokes Machine Co., Philadelphia.

It was largely through the efforts of Dr. Flosdorf, in association with Stokes' engineers, that equipment for and the process of sublimation or desiccation from the frozen state had been fully developed by the time this country entered the war. This process and equipment, for the large-scale production of blood plasma and penicillin is now in use in twenty-two foreign allied countries, as well as the U.S.A.

Silbersack Named Amer. Home Prexy

Walter F. Silbersack has been elected president of American Home Products Corp. He moves from the office of executive vice-president and general manager to the post resigned by Knox Ide. Mr. Ide continues as the corpora-

WALTER F. SILBERSACK

tion's general counsel and as a member of the board of directors, the executive, finance and operations committees.

Mr. Silbersack joined American Home Products in 1927 when it acquired the A. S. Boyle Co., Cincinnati. In his new post he will supervise the entire operation which in 1944 did a gross business of $105,000,000. One of his major projects will be the direction of the company's $15,000,000 expansion program.

Before entering business he was assistant professor of marketing and merchandising at the University of Cincinnati. In 1917 he transferred to the advertising field and six years later joined the A. S. Boyle Co. as advertising and merchandising manager. He was general manager of the company when it was acquired by American Home in 1927 and in short time became president of A. S. Boyle. Elected a director of American Home Products in 1935, he moved to the parent company in 1942 as vice-president in charge of advertised products. A year later he became executive vice-president and general manager.

Kaufhold Advanced by American Ferment

Donald S. Kaufhold has been appointed director of the newly created professional service department of the American Ferment Co., Inc., The company specializes in products sold under the company's trade-mark "Caroid."

Mr. Kaufhold has been with American Ferment Co. as a detail man for the past six years and previously was associated with a pharmaceutical house in Philadelphia.

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CITRIC ACID

Although demands continue to be heavy, our supply position is considerably improved. Users of Citric Acid will find us prepared to meet their normal requirements.

Recognized Everywhere

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Heyden Acquires C. E. Jamieson

An agreement has been made between Heyden Chemical Corp. and C. E. Jamieson & Co., Detroit, whereby Heyden will acquire the assets of the Jamie-

C. E. JAMIESON

son company. Heyden would assume all of the Jamieson liabilities and issue to Jamieson 31,826 shares of Heyden's common stock.

Abbott Advances Fritzlen

G. Harold Fritzlen has been appointed assistant advertising manager

G. HAROLD FRITZLEN

of Abbott Laboratories. Mr. Fritzlen has been in charge of all production in the Abbott advertising department for the past twelve years.

Dr. Smith Leaves FDA

Dr. R. B. Smith, Jr., acting chief of the Division of Pharmacology of the Food and Drug Administration has submitted his resignation which will take effect December 1, to become assistant dean of the School of Pharmacy of the Medical College of Virginia.

Dr. Smith joined the FDA in 1941 as assistant to the late Herbert O. Calvery, chief of the division. Dr. V. J. Voss, Jr., will become acting head of the division until a successor to Dr. Calvery is appointed.

Four Research Chemists Join Baker

The addition of four research chemists to the staff of J. T. Baker Chemical Co., Phillipsburg, N. J., has been announced by Ralph A. Clark, vice-president.

Dr. Werner Baumgarten who received his doctorate in biochemistry at the California Institute of Technology in 1941, comes to Baker from Hiram Walker & Sons, Inc., Peoria, Ill., where he has been since that time. Dr. John H. Gardner received his doctorate at the University of Illinois in 1923. He has held several academic positions, the last of which was as associate professor of chemistry at Washington University in St. Louis. Dr. Remsen Schenck was working on atomic power in the Metallurgical Laboratories until joining Baker. He received his doctor's degree from the University of Chicago in 1940. Dr. Harold Schedl will receive his doctor's degree from Yale University this year.

Perkin Medal to Dr. Frary

Dr. Francis C. Frary, director of research of Aluminum Co. of America, has been elected to receive the Perkin Medal in recognition of his outstanding accomplishments in the field of industrial research. The presentation will take place at a dinner meeting of the American Section of the Society of Chemical Industry at the Hotel Commodore, New York, January 11, 1946.

He joined the staff of Oldbury Electrochemical Co. in 1915. There he developed the technique of producing phosgene which led to his service in World War I as a major in the Chemical Warfare Service.

In 1918 he became director of research of Aluminum Co. of America. Some of his outstanding achievements since that time include the production for the first time of very pure aluminum (99.98+) by electrolytic refining, the production of pure alumina by electrothermal processes, and numerous other metallurgical processes.

Fritzbro Reporter

A new news service, The Fritzbro Reporter, is being inaugurated by Fritzsche Brothers, Inc. In these days of rapidly changing conditions it will serve as a supplement to the company's regular wholesale price list, and will keep its readers informed on important trade developments as they occur. The first issue bore the date of October 11 and followed publication of the October wholesale price list.

Greer and Dr. Perkins Join Westbury

The Westbury Chemical Co., Inc., New York, has announced the appointment of H. Harrison Greer as vice-president in charge of sales, and Ralph

H. HARRISON GREER

A. Perkins, M. D., as medical director. Mr. Greer has been long associated in the pharmaceutical field with Parke, Davis & Co., Ayerst, McKenna & Harrison, Ltd., and the S.M.A. Corp. Most recently he was sales promotion manager for an Ohio insecticide firm.

Dr. Perkins practiced dermatology

RALPH A. PERKINS M.D.

and syphilology in Detroit and later was in charge of development and promotion of dermatological and syphilogical products for Parke, Davis & Co.

The Westbury Chemical Co. was formed to market new pharmaceuticals. Its first product is an antiseptic named Cerbinol for use in the animal field.

F. A. Neuberg Heads Enco Chem.

Frederick A. Neuberg, associated with Westvaco Chlorine Products Corp. in various sales executive activities for over twenty-five years has resigned to become president of Enco Chemical Corp., 441 Lexington Ave., New York.

Mr. Neuberg is the youngest son of the late William Neuberg, Sr., who founded the Enco business more than thirty years ago.

Major Bryan Returns to Fritzsche

After more than three years of service with the American Air Force's 51st Fighter Group, Major Charles C. Bryan is now back with the sales division of Fritzsche Brothers, Inc.

During most of his absence, Major Bryan served in the China-Burma-India theater, spending twenty-six

CHARLES C. BRYAN

months in China. His duties in Combat Intelligence brought him in frequent contact with General Claire L. Chennault, leader of the Fighting Tigers, and an official mission enabled him to reach the musk region of Tibet where, in his leisure, he had opportunity to study and obtain up-to-date and little known data on the trade in Tonquin Musk.

Pickard Joins Robinson Wagner

Joseph C. Pickard has joined the sales staff of Robinson Wagner Co., New York, manufacturer of lanoline and its derivatives. A graduate of Bard College, he has just received his discharge from the Army where, as a lieutenant, he served as medical supply and personnel officer on the U.S.A. Hospital Ship Acadia.

Drug Men in Radio Quiz

At the monthly luncheon meeting held at the Drake Hotel, Chicago, September 28, four past presidents of the Chicago Drug & Chemical Association, fought valiantly, but in vain, to win the quiz contest with the St. Louis Drug Club experts. The team was composed of Ed Drach, Elmer Smith, Frank Charley and president Harry Dunning.

Members of the victorious St. Louis team were: Robinson Ord, Monsanto Chemical Co., G. C. Bradshaw, Mallinckrodt Chemical Works; Franc Barada, Fritzsche Brothers, Inc.; and Morton Meyer, Thompson-Hayward.

B. T. Bush Jr. Joins Bush Aromatics

Bush Aromatics, Inc., has announced that B. T. Bush, Jr., has become associated with the company. After graduating from Hamilton College he entered the Naval Reserve in August 1940, as an aviation cadet. He has since been flying for the Navy, ferrying aircraft and serving as an instructor in this country and in Central America. He had formed a crew of six for the PV-2 (Harpoon) and was destined for the Pacific when the war was terminated.

Lt. Goldman Released from Service

Lieutenant Arthur Goldman, formerly New York sales representative of Standard Synthetics, Inc., was released from the Navy October 15 after serving for forty months. He plans to return to the essential oil field.

Alexander Returns to D.C.I.

Paul W. Alexander, who has been on leave of absence as advertising representative of DRUG AND COSMETIC INDUSTRY, has returned to his duties with this publication. He entered the armed forces on March 17, 1941, and was graduated from the Officers' Training School at Fort Benning, Ga., as a second lieutenant in the infantry May 1, 1942. On October 20, 1942 he became a first lieutenant and was sent overseas in the fall of 1943. In England he became connected with SHAEF, and in July 1944 he went to France and was later promoted to the rank of captain.

Dr. Starr Joins Penick

Dr. Donald F. Starr has joined the research department of S. B. Penick & Co., New York. For the past ten years he has been on the staff of the United States Bureau of Entomology and Plant Quarantine abroad and at the bureau's experimental station in Beltsville, Md. Most recently he has concerned himself with the methods of formulating and applying DDT and will continue to work along similar lines with the Penick organization.

McKesson Advancements

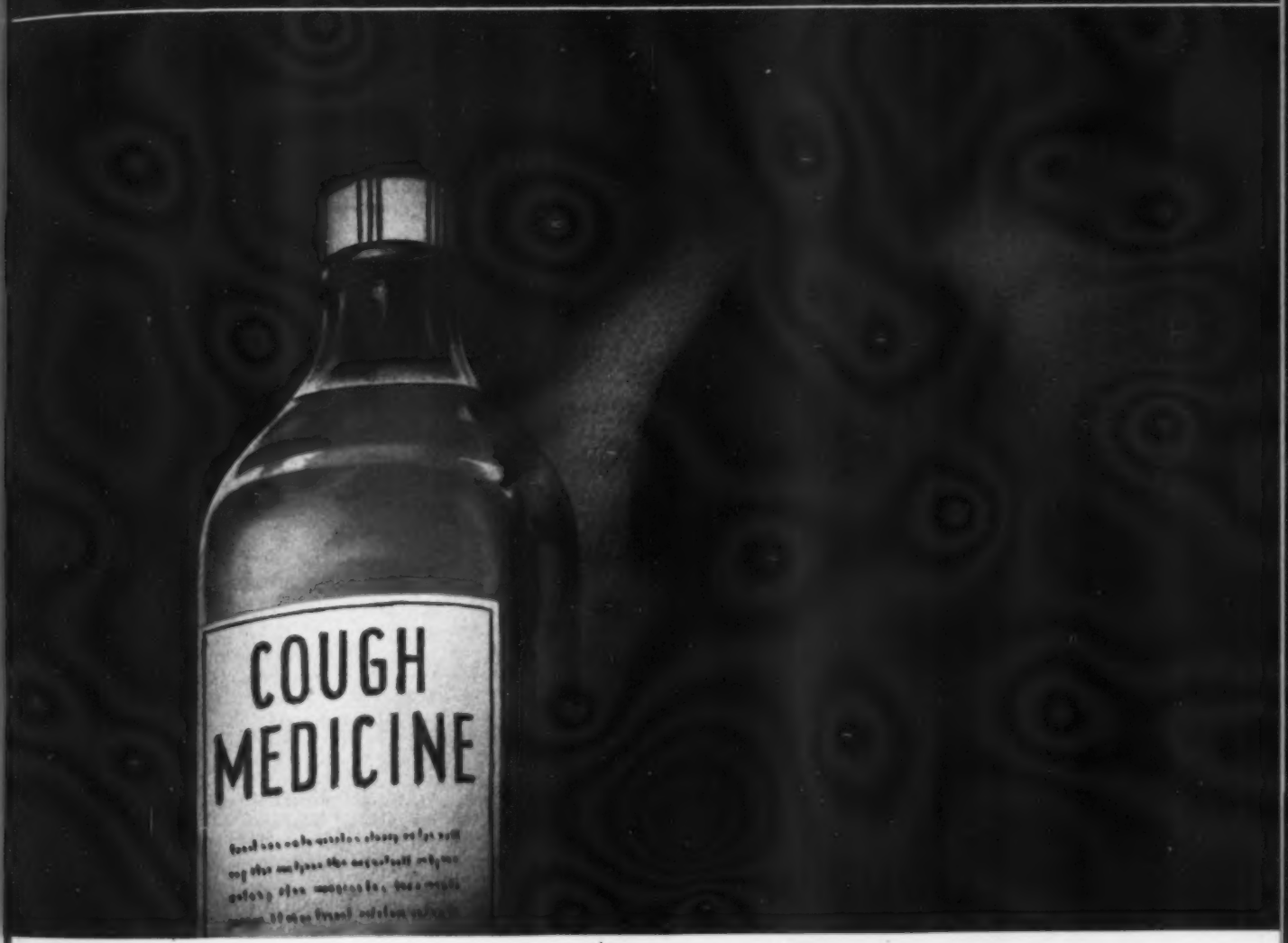
Directors of McKesson & Robbins, Inc., at their annual meeting October 24 elected George Van Gorder of New York, executive vice-president, and George V. Doerr of Minneapolis first-vice-president.

Millard Back

Nelson Millard returned to Bourjois, Inc., New York, upon his release from the U. S. Navy, September 17. He is now metropolitan sales manager for the organization. Mr. Millard was commissioned a lieutenant junior grade in the United States Navy in October 1942. He was later promoted to lieutenant and was commanding officer of a series of four mine sweepers. Mr. Millard had been with Bourjois for more than twelve years and was vice-president of the Bourjois Sales Corp. of California for two years before he joined the Navy.

Edgar Brand, luncheon chairman, president Harry Dunning and past presidents, Elmer Smith and Frank Charley, with Morrison Wood of WGN when the Chicago Drug and Chemical Assn. competed in the "Quiz of Two Cities."

Three "musts" in the making of a cough medicine!



- *fine chemicals of measured purity*
- *your technical skill in manufacturing*
- *rigid laboratory control in your plant*

Every year, millions of bottles of cough medicines are used by the American people — to soothe irritated throats and to relieve coughs.

Leading pharmaceutical manufacturers of cough medicines exercise extraordinary care in making these products, so that they may be not only efficacious but palatable as well.

And in that making, there are three vitally important "musts":

- selection of the most uniform fine chemicals, which are important ingredients in a cough medicine.
- scientific compounding and processing of all the ingredients to achieve a quality finished product.
- rigid laboratory control, including testing of all raw materials, and constant testing of the manufactured product itself.

The first of these "musts" is of great importance to manufacturers of cough medicines.

Choosing fine chemicals with purity to the decimal, makes the manufacturer's job easier all the way. When you specify any Baker fine chemical, you specify quality *at the beginning* and you get it. Both your compounding and your laboratory control are simplified. You have quality insurance for your products.

For more than 40 years, the J. T. Baker Chemical Co. has built its chemical business on measured purity. That is why leading pharmaceutical and drug companies choose Baker as a source of supply. They know that Baker's "purity by the ton" in fine chemicals is the result of unique control methods and ceaseless testing.

J. T. Baker Chemical Co., *Executive Offices and Plant:* Phillipsburg, N. J.; *Branch Offices:* New York, Philadelphia and Chicago

Baker's
FINE CHEMICALS

Little Packaging Library Here's a treat

for a man interested in packaging—ten booklets on packaging, written by authorities on the subject and condensed for fast, easy reading. The "little library" covers specifying, sealing, stacking, loading, and shipping. It provides complete information on shipments by air express. It tells how to package your product for maximum display and increased sales. These little booklets offer more practical packaging experience than you will find in many textbooks.

TEN BOOKLETS ON PACKAGING

Ten booklets comprise H & D's "Little Packaging Library." They cover, in condensed form, every important phase of corrugated packaging. If you pack your product in corrugated—or if you think your product can be packed in corrugated, be sure to send for the "Little Packaging Library." Get a set for each man in your shipping room.

Hinde & Dauch

AUTHORITY ON PACKAGING

THE HINDE & DAUCH PAPER COMPANY, 4577 DECATUR STREET, SANDUSKY, OHIO

Factories in BALTIMORE • BOSTON • BUFFALO • CHICAGO • CLEVELAND • DETROIT • GLOUCESTER, N. J. HOBOKEN • KANSAS CITY • LENOIR, N. C. • MONTREAL • RICHMOND • ST. LOUIS • SANDUSKY, OHIO • TORONTO

Rodriguez Joins Bristol Labs.

Jack F. Rodriquez has been appointed export manager of Bristol Laboratories, Syracuse. He is a native of Havana, Cuba, and received his education in that city at the Collegio Mimo.

For the past seven years Mr. Rodriquez has been associated with a large middle western pharmaceutical house in their export department, latterly in the capacity of export sales supervisor.

Monsanto Synthetic Caffeine Plant

Monsanto Chemical Co. has plans for the construction and operation of the world's first large-scale plant for the manufacture of synthetic caffeine. The plant which will cost approximately $1,500,000 will be built in St. Louis and will use an improved process whereby the synthetic material is derived from nitrogen and hydrogen.

Monsanto's process was worked out by Dr. Oliver Weinkauff under the supervision of Dr. L. P. Kyrides, organic research director of the company.

Matthew Products Protects Packages

Matthew Products, Inc., has been awarded a permanent injunction against Arthur Hershey, doing business as Woodland Toiletries restraining Hershey from using packages which are similar to the packages of Matthew Products. The packages restrained are for packaging Woodland Pine Needle Bubble Bath Powder, Woodland Pine Needle Bubble Bath Liquid, and Woodland Concentrated Pine Bath Oil. Hershey is also restrained from using any packages substantially similar to the packages of the Thermopine line of products marketed by Matthew Products.

According to the decision, Hershey formerly owned Thermopin Laboratories but he sold it out to Matthew Products, Inc., and was an employee of the corporation from March 1943 until March 26, 1945. In June 1945, Matthew Products brought out a new line of containers and about a month later the restrained Woodland containers made their appearance. The court points out that Matthew Products were working on these new containers since February 1944 and that Hershey was actively engaged in the development of them during the last year that he was employed by Matthew.

Penick Buys Research Building

S. B. Penick & Co., New York, has purchased a three-story research laboratory building located on West Side Avenue and Fox Street in Jersey City. The building which was erected by the Port of New York Authority has already been occupied by the Penick research staff under Dr. W. G. Bywater, general research director. The company plans to broaden its research activities and the increased facilities afforded by the new building will make this possible.

New research laboratories purchased by S. B. Penick & Co., producers and manufacturers of botanical drugs and fine chemicals.

L. A. Chiris Visits Here

Leon A. Chiris, head of the Chiris enterprises throughout the world, made his first visit to New York in six years this fall. Mr. Chiris was recently released from the French Air Force where he had served as a navigator.

He reported that the Chief laboratories and factories in Grasse are intact and that they have been able to retain their key personnel and experts throughout the war.

Mr. Chiris hopes to return to New York for a lengthy visit with Antoine Chiris Co., Inc., in January.

Dr. Rosin Retires from Merck

Dr. Joseph Rosin, vice-president of Merck & Co., Inc., Rahway, N. J. and recipient of the 1945 Remington Medal, retired November 1. He joined Powers-Weightman-Rosengarten Co. in 1909 as a chemist and became chief chemist in 1913. In 1927 when the firm was merged with Merck & Co., he was made a vice-president of Merck.

Dr. Beverly L. Clarke, formerly director of the analytical department of Bell Telephone Laboratories, Inc., succeeds Dr. Rosin under the newly created title of director of chemical control. Dr. Clarke received his B.Sc. in chemistry at George Washington University in 1921, his master's degree from Columbia University in 1923, and his Ph.D. from the same school in 1924.

Livermore with Revlon

A. N. Hosking, Jr., general sales manager of the Revlon Products Corp., New York, has announced the appointment of Jesse L. Livermore, Jr., as sales promotion manager. Prior to this, Mr. Livermore was engaged in essential war work as industrial engineering supervisor of the Consolidated Vultee Aircraft Corp.

Modern pH and Chlorine Control

W. A. Taylor & Co., 7300 York Road, Baltimore, has issued a completely revised, seventh edition of its handbook, "Modern pH and Chlorine Control." This is a combination handbook and catalogue which contains both simple and technical explanations of the meaning of pH control; specific discussions of the application of pH, chlorine and phosphate control to 35 industries; the precautions to be observed in making determinations; and descriptions of all Taylor outfits. Copies are available upon request.

Count on MONSANTO for these first 2 factors in your SUCCESS FORMULA

1. Continuous and exhaustive *research*

2. Chemicals of correct-to-the-decimal-point *purity*

3. Compounding and processing *"know-how"*

4. Constant and strict laboratory *control*

= Pharmaceutical Manufacturing *Success*

MONSANTO PHARMACEUTICALS

Saccharin, U.S.P.; Glycero-Phosphates; Sodium Benzoate, U.S.P., Sodium Phosphate, Di; Methyl Salicylate, U.S.P.; Ferric Phosphates; Chloral Hydrate, U.S.P.; Caffeine, U.S.P.; Phenol, U.S.P.; Benzoic Acid, U.S.P.; Magnesium Phosphates; Salicylic Acid, U.S.P.; Phenolphthalein, U.S.P.; Chloramine-T, U.S.P.; Phosphoric Acid; Calcium Phosphate, Di; Acetyl Salicylic Acid (Aspirin); Acetophenetidin, U.S.P.; Potassium Ammonium Phosphate; Sodium Salicylate, U.S.P.; Sulfanilamide, U.S.P.; Acetanilid, U.S.P.; Salol (Phenyl Salicylate).

With absolute confidence you can count on Monsanto for these extremely important ingredients among those which make up your manufacturing success: (1.) continuous and exhaustive research, and (2.) chemicals of correct-to-the-decimal point purity.

Your own contributions then automatically count for more; for you have given your efforts the soundest possible starting point; chemicals of consistent and definitely specified quality.

Monsanto, large-scale producer of U.S.P. grades of a wide variety of chemicals used by leading pharmaceutical and drug companies will gladly consult with you at any time. Just contact the nearest Monsanto office, or write: MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri. District Offices in: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle, Montreal, Toronto.

MONSANTO CHEMICALS
SERVING INDUSTRY...WHICH SERVES MANKIND

Warburton Joins Warner

Eliot Warburton has joined William R. Warner & Co., Inc. as managing director of all its subsidiary companies in Great Britain.

Mr. Warburton was with Vick Chemical Co. for fourteen years, having complete charge of the company's activities

ELIOT WARBURTON

in the United Kingdom and subsequently throughout Europe. He served as a major in the British army during World War I and was recalled to active duty as a member of the British Army General Staff at the start of World War II. Two and a half years later he was released to organize and direct the United Kingdom Information Office in Canada. Twenty months later he resigned to join the foreign division of American Home Products Corp. and was made vice-president when it was incorporated as Home Products International Ltd., in New York.

Cordero Named Lemke Manager

T. M. Cordero has been named general manager of B. L. Lemke & Co., New York. Mr. Cordero was formerly associated with Henry C. Fuller Consulting Laboratories, Washington, the United Drug Co., and Quaker Chemical Products Co.

Patch Names Dr. Cook Research Dir.

The E. L. Patch Co., Stoneham, Mass., has appointed Dr. Charles A. Cook as research director of the company. He was graduated from the University of New Hampshire in 1927 and obtained his master's degree and his Ph.D. from Yale where he was assistant instructor in medical and graduate courses.

Dr. Cook was at one time connected with Sterling Chemistry Laboratories and has had extensive experience in pharmaceutical research in New York and St. Louis.

McKay Named President

Hugh D. McKay, vice-president and director of the Vick Chemical Co., has been named president of the Alfred D. McKelvey Co.

Alfred D. McKelvy has resigned as chairman of the board, it was also announced, but will continue his connection with the McKelvy Company as consultant on merchandising, sales and advertising.

Dr. Justice Joins Lakeside Labs.

Dr. Robert S. Justice has joined the technical staff of Lakeside Laboratories, Inc., Milwaukee. A native of Ohio, Dr. Justice received his B.Sc. and M.Sc. degrees at Ohio State University, and his Ph.D. in pharmacy at the University of Florida.

DR. ROBERT S. JUSTICE

In the past few years he has been chief chemist of Kramers-Urban Co., Milwaukee, and director of research with the S. E. Massengill Co., Bristol, Tenn.

Lueders Celebrates 60th Anniversary

George Lueders & Co., New York, celebrated its sixtieth anniversary at the Drug & Chemical Club. The Twenty-five Year Club awarded fifty-year diamond pins to three members—Edward V. Killeen, former president; Ferdinand Weber, vice-president; and Rose Kroog, head of the invoice department, retired.

The company was established October 10, 1885. It became a partnership in 1892, comprised of George Lueders, Ferdinand Weber and Henry Heister, and was incorporated in 1906.

A Daughter to the Garlicks

T. H. Garlick, sales manager of Seeley & Co., Inc., New York, and Mrs. Garlick have announced the arrival of a daughter, born October 4.

Gorgas Medal to Capt. Coggeshall

The Gorgas Medal, established by Wyeth Inc., Philadelphia, and awarded annually since 1942 for outstanding work in preventive medicine for our armed forces, was presented to Captain Lowell T. Coggeshall, M.C., U.S.N.R., by the Association of Military Surgeons

CAPT. L. T. COGGESHALL

of the United States, at a dinner in his honor at the Mayflower Hotel, Washington, October 29.

Captain Coggeshall, a native of Saratoga, Ind., prior to his assignment in 1943 by Vice Admiral Ross T. McIntire, Surgeon General, U. S. Navy, to the task of rehabilitating victims of filariasis and malaria, was chairman of the department of tropical diseases of the University of Michigan and before that was director of malaria research at the Rockefeller Foundation.

Chemical Exposition in New York

The 20th Exposition of Chemical Industries is being organized for the week of February 25 to March 2 in Grand Central Palace, New York, lately occupied as an army induction center.

Packaging Institute Meeting

The seventh annual meeting of Packaging Institute, Inc., will be held at the Hotel Commodore, New York, November 26 and 27. Because of crowded hotel and traveling facilities, attendance will be limited to the membership of the Institute.

Major Albin P. Dearing has been appointed executive director of the Institute and assumed his new duties November 1.

A Daughter to the Forsmans

Paul Forsman of C. H. Forsman Co. and Mrs. Forsman have announced the birth of a daughter, Marie Linda, on October 2. This is their fifth child. The other four are boys.

Whitman Joins Bristol-Myers

Roger C. Whitman has been appointed assistant advertising manager of Bristol-Myers Co. Mr. Whitman, who was discharged from the Navy in September with the rank of lieutenant commander, has had twelve years of

ROGER C. WHITMAN

advertising experience as an assistant account executive and writer with two agencies, Pedlar & Ryan and Batten, Barton, Durstine & Osborn.

Dr. Russe Retires from Mallinckrodt

Dr. Frederick W. Russe, vice-president and secretary of Mallinckrodt Chemical Works, St. Louis, retired from active service with the company on October 15. He is being retained by the company in a consulting capacity.

Empire Box Celebrates

To celebrate the fourth anniversary of the Empire Box Corporation's ownership of its paper mill in Stroudsburg, a dinner was given in honor of S. J. Klein, Empire president, at the Indian Queen Hotel, Stroudsburg, Pa. This has been the year of greatest expansion in the mill's facilities.

Florasynth Elects Officers

At a meeting of stockholders and directors of Florasynth Laboratories, Inc., held in New York, the following officers were elected for 1946. Dr. Alexander E. Katz was elected to the newly created post of chairman of the board and William Lakritz was elected president. Officers who were re-elected are: David Lakritz, vice-president in charge of manufacturing and research; Leonard Katz, vice-president and assistant to the chairman of the board in charge of West Coast activities; Joseph H. Fein, treasurer, in charge of the company's purchasing both in this country and abroad; Charles P. Kramer, secretary and counsel; and Charlotte F. Senior, assistant secretary-treasurer.

The company has acquired a five-story building covering the entire block on the east side of Willow Ave. between 134 St. and 135 St. in New York, to house the main office, enlarged manufacturing facilities, research laboratories and warehouse. A manufacturing plant in San Bernardino, Calif., has also been acquired and the Los Angeles headquarters have been enlarged.

Edward Remus to Retire

Edward Remus, president of Edward Remus & Co., Inc., has announced that he will retire from active business as of January 1946. His son, Richard Remus, heretofore in charge of the company's western office in Kansas City will succeed him as president. Mr. Remus will continue to serve as chairman of the board.

George N. Cox now succeeds Richard Remus as manager of the western office. Henry H. Pine will be in charge of the Chicago office which the company is opening the first of the year.

Bauer in Europe

Herbert Bauer, president of Herba, Inc., is in Europe to reestablish foreign marketing and distributing centers for prominent American companies in the toilet goods and allied fields. Among those are Schnefel Bros. Corp., Germaine Monteil, Owens Brush Co., J. V. Pilcher, Allen B. Wrisley, Maybelline and Kurlash.

Paul Lewis Labs. Award

The Paul Lewis Laboratories, Inc., Milwaukee, Wis., has established an annual award for outstanding work in the field of enzymes and has requested the American Chemical Society to administer the award.

The award which will be made for the purpose of stimulating fundamental research in enzyme chemistry in the United States by young men educated in a college or university in the United States, will consist of $1,000 and a bronze medal (or diploma).

J. J. Williams of the Eastern Research Laboratory of the Department of Agriculture has been appointed chairman of the canvassing committee.

Carroll Elected Vice-President

George S. Carroll has been elected vice-president of Primrose House, New York. Mr. Carroll joined Primrose House in January, 1945, after his resignation as general sales manager of Tussy Cosmetiques. He is also general sales manager of Primrose House.

Ruth Bolway Succeeds Miriam Gibson

Shulton, Inc., New York, has announced the appointment of Ruth Ann Bolway as publicity director. She succeeds Miriam Gibson, who resigned and will retire from active business. Miss Bolway has been with Shulton for the last eighteen months as assistant publicity director.

For the first time in over 100 years, the four Stradivari instruments owned by Paganini were played together on the Stradivari Orchestra program. Standing from right to left are Norman F. Dahl, president, and Jean Coxe, vice-president of Prince Matchabelli Co., sponsor of the program; Emil Herrmann, owner of the Paganini Quartet, and Paul Lavalle, conductor of the orchestra

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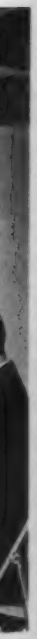

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U.S.I. CHEMICAL NEWS

November ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1945

Synthetic Short Cuts Via New Chemicals Predicted by U.S.I.

Possibilities Barely Tapped for Five New Organic Intermediates

New products, and economical synthetic short cuts to old ones are promised by five new chemicals which U.S.I. has produced by claisen-type condensations. Although exploration of their full possibilities has been delayed as a result of concentration on specific war problems, these five organic intermediates are on their way toward playing an important part in the synthesis of drugs, medicinals, dyes and specialties.

One substantial use of alpha acetyl butyro lactone is in the synthesis of vitamin B_1. 5-diethylamino pentanone-2 is an important intermediate in the manufacture of atebrin.

A third new organic chemical, ethyl alpha-

(Continued on next page)

X-Rays Give Chemists New Tool for Analysis

Closely following the discovery that atoms identify themselves by the amount of X-radiation they absorb, comes the development of special sensitive apparatus to measure this absorption, and give chemistry a new tool for rapid identification of the elements of which a substance is made.

The absorption of X-rays is approximately the same for each element, whether it is gaseous, liquid or solid. For instance, an atom of oxygen will have the same absorption whether it is in air, water or in sand.

To measure these differences in absorption with sufficient accuracy, an ultra-sensitive photo-electric cell of the multiplier type is used in connection with amplifiers in which weak signals are built up until it is possible to measure amounts of radiation with as little energy as one ten-billionth of a watt.

Enough work has already been done with the new method of analysis to show that for certain types of problems it offers clear advantages over older methods.

High Color and Gloss Retention Afforded by New Alkyd Resin

S&W Aroplaz 1241 Now Available Without Restrictions for Architectural Enamels, Marine Finishes, Mill-Gloss Whites

Foreshadowing a whole range of interesting new alkyd resins which will be available to protective-coatings manufacturers as reconversion gets into full swing is S&W Aroplaz 1241, just announced by U.S.I. "1241" is a long-oil, pure, oxidizing alkyd with properties which make it particularly well suited to a wide range of paints and enamels.

Architectural enamels formulated with "1241" will feature pureness of color and color and gloss retention not approached by prewar products.

Important among its characteristics are the pureness of color and high gloss and color retention which "1241" imparts to white enamels. In this respect, as well as in brushing qualities, exposure resistance and durability, it is superior to comparable finishes made with conventional alkyds of similar oil length. Films made with Aroplaz 1241 are found to be harder and to show greater resistance to abrasion, water, alkali, solvents and oils.

Relatively Non-Reactive

The new resin is a relatively non-reactive vehicle, which may be used with normal percentages of the usual basic pigments. It blends well with a wide variety of drying oils, varnishes and other alkyds. Blended with oil paints, it increases their hardness, speeds up drying and improves gloss retention and durability.

Exterior Applications

Alone or extended slightly with oils, "1241" makes excellent trim and trellis paints, as its durability is better than conventional long-oil alkyd resins. While it may be formulated with zinc oxide, it should be noted that inclusion of zinc oxide results in a slight loss of initial gloss and that gloss retention is also affected by the formation of the characteristic haze. However, gloss and gloss retention remain noticeably superior to that of coatings formulated with regular alkyds.

Supplies of S&W Aroplaz 1241 are not subject to allocation and are fully available for any application. Samples and additional data may be had on request.

SPECIFICATIONS

Solution in Mineral Spirits	69-71% N.V.
Viscosity (G.H.)	Y-Z_1
Acid Number	6-10
Color (G.H. 1933)	7-9
Wt./gallon at 25° C	8.05-8.15 lbs.

Solubility: Complete in petroleum and coal-tar hydrocarbons. Insoluble in ethanol. Compatible with wide range of vegetable drying oils, varnishes and other alkyds.

This smart Higgins "PT Junior" and many other craft will be a large market for durable marine enamels formulated with such S&W resins as "1241".

Better Marbleized Finishes

Layers of paint or enamel in several colors are floated on the surface of a tank filled with an aqueous solution. Articles are dipped into the tank through the layers of paint and pick up a coating of streaks of different colors in a marble-like effect, which wrinkles on drying, according to the patent.

Detects Toxic Gases

Toxic gases can be detected by bubbling air suspected of containing them through an ionizable solution such as ethanol and water, according to a recent patent. After the toxic gases have been absorbed, changes in the electrical resistance of the liquid indicate the presence of a soluble ionizable gas.

Atomic Chain Reaction Hinges on Ether-Purified Uranium Ore

With the publication of the official Smyth report on "Atomic Energy for Military Purposes," the news was out that one of the vital keys to the success of the entire atom-bomb project was ether extraction of uranium ore.

Uranium oxide of unprecedented purity was required to produce metal which would undergo a sustained chain reaction — the type of reaction necessary for either the explosion of U-235 or the production of plutonium. Experiments at the National Bureau of Standards showed that, by an ether extraction, all the impurities could be removed from uranyl nitrate in a single extraction. The report states "The use of this method removed the great bulk of the difficulties in securing pure oxide and pure materials for the production of metal."

Significantly, the report adds "This oxide is now used as a starting point for all metal production, and no higher degree of purity can be expected on a commercial scale. In fact, it was a remarkable achievement to have developed and put into production on a scale of the order of one ton per day a process for transforming grossly impure commercial oxide to oxide of a degree of purity seldom achieved even on a laboratory scale."

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November ★ **U.S.I. CHEMICAL NEWS** ★ 1945

Synthetic Short Cuts

(Continued from preceding page)

oxalpropionate, has six thought-provoking characteristics: 1. It loses carbon monoxide and yields diethyl methylmalonate on distillation; 2. Heated with ammonia, it forms alpha-methyl-beta-imino succinimide; 3. Boiled with alcoholic potassium hydroxide, it breaks down into propionic and oxalic acids, and alcohol; 4. Heated with ethyl iodide and sodium ethoxide, it yields alpha-methyl-alpha-ethyl-oxalpropionic ester; 5. Heating with dilute sulfuric acid produces propionylformic acid, alcohol, and carbon dioxide; 6. Hydrogenation gives diethyl alpha-hydroxy-beta-methyl-succinate, which yields 3-methyl 1, 2-butanediol, 2-methyl 1, 4-butanediol, alcohols and water.

The following physical constants of these new chemicals may suggest further uses and applications. Samples are available on request.

α-ACETYL BUTYRO LACTONE

Mol. Wt., 128. Sp. Gr., 1.185-1.189 @ 20/20° C. Refractive Index, 1.460 @ 20° C. Boiling Pt., 121-122° C. @ 10 mm. Hg. abs. Colorless liquid. Suggested Uses: Organic synthesis.

5-DIETHYLAMINO PENTANONE-2 (Noval Ketone)

Mol. Wt., 157. Sp. Gr., 0.865 @ 20/20° C. Refractive Index 1.435 @ 20° C. Boiling Pt., 90-92° C. @ 20 mm. Hg. abs. Colorless liquid. Turns dark on storage in contact with air. Suggested Uses: Organic chemical synthesis.

ETHYL ALPHA-OXALPROPIONATE

Mol. Wt., 202, Sp. Gr., 1.0977 @ 20/20° C., Refractive Index, 1.433 @ 20° C., Boiling Pt., 108-109 @ 5.5 mm. Hg. abs. Color light yellow to colorless.

ACETYL PROPYL CHLORIDE (5-Chloro Pentanone-2)

Mol. Wt., 120.5, Sp. Gr., 1.054 @ 20/20° C. Refractive Index, 1.440 @ 20° C. Boiling Pt., 71-72° C. @ 20 mm. Hg. abs. Colorless liquid. Turns dark on storage in presence of air. Suggested Uses: Organic synthesis.

METHYL CYCLOPROPYL KETONE

Mol. Wt., 84. Sp. Gr., 0.903 @ 20/20° C. Refractive Index, 1.426 @ 20° C. Boiling Pt., 111-113° C. @ 760 mm. Hg. Colorless liquid. Suggested Uses: Organic synthesis.

Acetone Process Cuts Costs of Mercuric Nitrates

Costs of mercuric nitrates, used as disinfectants and bactericides, can be materially lowered, according to claims made in a new patent.

Mercury diphenyl, dissolved in acetone, is mixed with a concentrated solution of mercuric nitrate in dilute nitric acid and acetone. Upon heating this mixture, the phenyl mercuric nitrate begins to precipitate at 45° C. After the reaction is complete, the phenyl mercuric nitrate is separated by filtration, and additional amounts are secured by evaporating the mother liquor.

Increased Water Content for Zein Solutions

Zein solutions, used in textile and paper finishes, adhesives, and pigment vehicles, can be given greater dispersion in water, according to the claims made by the inventor of a new process for preparing and using zein solutions. The paste described in the patent is composed of zein, ethanol, sulphated stearyl alcohol, and water. It is described as being dilutable with volumes of water far in excess of the quantity which would cause zein precipitation with ordinary mixtures.

Ethanol-Acetone Extract Aids Tetanus Treatment

Curare, a potent and deadly alkaloid used with lethal effects as an arrow-tip poison by South American indians, and by mystery-story writers to confuse the plot, has emerged as an agent to alleviate the agonizing pain of tetanus. Action of the curare extract used is to selectively depress the receptive mechanism of the skeletal muscles.

The active alkaloid used in this treatment, a foreign paper says, is extracted from any of the three forms of gummy, black, crude curare by dissolving in ethanol, evaporating the solution, re-dissolving the residue in water and precipitating out the inert matter with acetone. In addition to potentialities of this curare extract in the treatment of tetanus, it has long been known as a powerful anaesthetic. Its use is now suggested in the treatment of hydrophobia and in lessening the after-effects of shock-therapy treatment of certain mental disorders.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

Protective finishes, produced by an oxidizing process, are said to be applicable to copper alloys, brass, zinc, iron and steel. Finishes are said to be stable, long-lived and wear resistant. Colors, in addition to black, can be applied to copper and brass. Company offers a similar treatment for aluminum products which they say produces a hard, gray corrosion-inhibiting surface. **(No. 996)**

USI

Acid-and-alkali-proof cement, claimed to be inert to all alkalis, fats and grease, and most acids, is available for ceramic lining constructions. It is said to be abrasion resistant, quick setting and easy to use. **(No. 997)**

USI

A new liquid adhesive, for joining metals, wood, plastics and glass is said to combine exceptional coverage with high strength. Curing is done under heat and pressure. **(No. 998)**

USI

A new silicon lubricant, for valves handling steam, hot gases, high vacuum, and most dilute mineral acids, is offered with the statement that its viscosity remains unchanged from 40 to 400 F. **(No. 999)**

USI

A replacement for China Wood Oil is offered in the form of a modified linseed oil claimed to body rapidly in the varnish kettle, to be compatible with resins used to produce durable, fast drying varnish films. **(No. 1000)**

USI

A "harnessed" formaldehyde is offered to provide better control of the reaction of formaldehyde with various chemicals, including phenols, amines and hydrocarbons. The new formaldehyde is said to increase the yield and improve the quality of end products. **(No. 1001)**

USI

A non-inflammable plastic is described as being thermosetting, and having high optical qualities, electrical resistance and resistance to abrasion, oils and most chemicals. Its refractive index is about 1.57. **(No. 1002)**

USI

To dustproof concrete floors, a liquid is available which is designed to fill the pores, and react with the cement to form a tough non-dusting surface that resists the action of moisture and chemicals. It is applied by brush or sprinkler. **(No. 1003)**

USI

An anti-fog film, claimed to penetrate the submicroscopic pores of glass and thus prevent fog, frost, and steam accumulation, is now on the market. It is applied by spreading on both sides of the surface, then polishing. **(No. 1004)**

USI

Improved plastic production is claimed for a new organic peroxide, announced as having a higher oxygen content, being purer, and having great utility as a polymerization catalyst for production of plastics where no catalyst diluent can be tolerated. **(No. 1005)**

USI

Bleaching wool, rayon and cotton, without weakening the fabric, is a new application announced for an organic chlorine compound. **(No. 1006)**

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Diethyl Carbonate
Ethyl Chloroformate
Ethyl Formate

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Acetoacet-ortho-anisidide
Acetoacet-ortho-chloranilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloranilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate
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Ethyl Ether
Ethyl Ether Absolute—A.C.S.
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*Curbay B.G.
*Curbay Special Liquid
*Vacatone 40

ACETONE
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S&W Ester Gums—all types
S&W Congo Gums—raw, fused & esterified
S&W *Aroplaz—alkyds and allied materials
S&W *Arofene—pure phenolics
S&W *Arochem—modified types
S&W Natural Resins—all standard grades
OTHER PRODUCTS
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Ethylene Glycol
Nitrocellulose Solutions
Ethylene
*Indalone
Urethan

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Heads Citro-Chemical

Charles P. Walker, Jr., manager of the New York branch of Merck & Co., Inc., has been elected president of the Citro-Chemical Corp. of America, a subsidiary of Emerson Drug Co. Mr. Walker, who will assume his new duties January 1, succeeds Walter W. White who is retiring from active management of Citro-Chemical.

Lt. Col. Ascher Returns to Breon

Lt. Col. Bordner F. Ascher returned to his desk as director of sales for the George A. Breon Co., Kansas City, Mo., November 1. While on active duty, Col. Ascher, who is a West Point graduate, was in charge of all Engineer Bases under 8th Army control which includes New Guinea and the Philippines.

C. B. Drolsbaugh has been made general sales manager of the company. He has been with Breon for twelve years and has served in every sales position from road salesman to general manager.

Blue Crest Labs. Formed

The Blue Crest Laboratories has been established at 5317 Fort Hamilton Parkway, Brooklyn, N. Y. for the manufacture of cosmetics under the trade name "Blue Crest," and the laboratories will have facilities for the manufacture of private brand cosmetics.

The technical and manufacturing department will be under the supervision of Morton M. Jacobs, formerly owner of the "Allure" Certified Cosmetic Laboratory, and for the past fifteen years with the New York City Department of Health and the New York State Department of Agriculture as food, drug and cosmetic specialist. Max Maiman will have charge of sales and distribution.

Bullwinkel Joins Penick

J. Treadwell Bullwinkel has been elected vice-president, in charge of finances, of S. B. Penick & Co., New York.

Mr. Bullwinkel has been for many years president and chairman of the board of the Phosphate Mining Co., which recently under his guidance merged with the Virginia Carolina Chemical Corp.

Smith Named Vick V.P.

Marion W. Smith, manager of Vick Chemical Co.'s diversification division, has been elected a vice-president of the company. He joined Vick in 1935 and was elected a director in January 1945.

MARION W. SMITH

Sherwood E. Silliman chief counsel of the company, was named assistant secretary.

Adkins on Trip

Bill Adkins and Mrs. Adkins are taking a little vacation, combining business and pleasure. They went to Baltimore and Washington and were in Richmond for Thanksgiving.

L. G. Wagner (Manila) Ltd. Organized

Louis G. Wagner, former president of the Advertising Club of the Philippines, has resigned from Home Products International, the foreign division of American Home Products, to organize L. G. Wagner (Manila) Ltd.

Mr. Wagner who has successfully introduced a number of American products in the Philippines and the southwest Pacific will return there early next year.

Ertel Appoints Hansen

Henry E. Hansen, recently released from his war activities, has been appointed to the sales engineering staff of the New York office of the Ertel Engineering Corp.

E. Leidy Brendlinger

E. Leidy Brendlinger, president of the Dill Co., Norristown, Pa., died at his home in that city November 12. He was fifty-two years old.

Mr. Brendlinger, who had been associated with Dill, since 1916 was a former president of the Philadelphia Drug Exchange and secretary of the Flavoring Extract Manufacturers Association.

Van Dyk-Summit Dinner

Van Dyk & Company, Inc. and Summit Chemical Corp. of Belleville, N. J. gave a dinner on Saturday evening, November 3 to their executives, production and sales staff.

Among the guests were the staff of Patent Chemicals, Inc., and Synthetic Chemicals Inc. of Paterson, N. J., with which Dr. S. Isermann, president of Van Dyk, is also associated.

The dinner was held in the Terrace Club of the Hotel St. Moritz, New York and Dr. Isermann presided.

Dinner of Van Dyk & Co. and Summit Chemical Products at the Hotel St. Moritz, New York, November 3.

BOUQUET SUPERB

A rich fragrance suitable for moderate priced extracts and colognes.

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A delightfully soft, mellow, semi-floral fragrance ideally suited for colognes. Quite inexpensive.

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Snyder Forms Own Service

Gilbert D. Snyder, art director of Shoup-Owens Inc. and the Karl Voss Corp., was given a farewell dinner by members of the company on October 5.

Mr. Snyder, a three time top award winner in the All American Packaging competition, has formed his own package designing service with headquarters at 345 Broadway, New York. He has already been engaged by Louis Dejonge & Co. as art director and merchandising advisor exclusively in the packaging paper field.

GILBERT D. SNYDER

Mr. Snyder has been with Schoup-Owens Inc. and the Karl Voss Corp. for the past eight years and has been especially active in the cosmetic field.

French Firm Wants Amer. Products

Centre Expansion Commercial, 31 Rue Senac, Marseilles, France has expressed a desire to represent American manufacturers of cosmetics. The organization has distributing facilities in Paris, Lyon, Morocco, Algeria, and Belgium. Anyone interested in such representation should communicate with Emmanuel Alexander, 40 West 77 St., New York.

Greek Firm Wants Amer. Products

Pan. Chr. Sophianopoulos, 4 Aristidou St., Athens, Greece, is interested in representing in Greece manufacturers of chemicals, drugs and pharmaceuticals.

Indian Firm Wants Amer. Products

M. Valab & Co., Fadoo Building, Karachi 2, India, manufacturers' representative, is eager to get in touch with manufacturers of drugs and cosmetics, who are interested in entering the Indian market. Information concerning the firm's standing can be obtained from the Chartered Bank of India, Australia and China, New York.

Dr. Dove Joins Dodge & Olcott

Dr. Walter E. Dove has resigned from the United States Bureau of Entomology and Plant Quarantine to join the insecticide department of Dodge & Olcott, Inc. where he will organize and direct its unit of entomological research. His staff will include Lawrence C. McAlister, Jr., formerly assistant director of the Orlando Station of the Bureau, Herman O. Schroeder, and Dr. Merritt P. Sarles.

A graduate of Mississippi State College, and with a degree of Sc.D. from Johns Hopkins University, Dr. Dove's work with the Bureau covered a wide range of insect control problems. He organized and supervised the war work of the Orlando station.

Mr. McAlister is a graduate of Clemson College and served as assistant director of research at Orlando and prior to that worked on a number of agricultural pest control problems. Mr. Schroeder, who received his MSc. from Kansas University in 1930 also worked at the Orlando bureau. Dr. Sarles, a graduate of Wesleyan University, received his doctor's degree in 1929 from the School of Hygiene and Public Health at Johns Hopkins University. He has worked with the Rockefeller Institute, the University of Chicago, and more recently at the Beltsville Research Laboratory of the Department of Agriculture.

Havana Agents

R. A. Andrade, representing Anval, L.S., P.O. Box 1107, Havana, Cuba, is interested in contacting American manufacturers of perfumes and cosmetics who wish to establish representation in that country.

La Farmacia Profesional, S.A., Calle 23, 155, Vedado, Havana, Cuba, is interested in representing American manufacturers of pharmaceutical products in Cuba. The president of the company is Dr. Maria L. Pina.

Egyptian Firm Wants Amer. Products

Capt. Dr. Mohammed F. E. Tobgi of the Chemical & Pharmaceutical Industries of Egypt, Inc., 1 Fouad St., Cairo, is interested in pharmaceuticals, surgical and hospital equipment, nutrition elements, biological and blood preparations, cosmetics, toilet articles, beauty parlor instruments. He is at present in this country and can be reached until November 30 in care of Egyptian Consulate, 500 Fifth Ave., New York.

Guerin in New York

J. I. Poses, president of the D'Orsay Sales Co., has announced the arrival in New York of Jacques Guerin, director of Parfums D'Orsay, Paris. Mr. Guerin, plans to be in New York for several weeks.

Dr. Stumbo Joins Owens-Illinois

Dr. Charles R. Stumbo has joined the process and product research division of the Owens-Illinois Glass Co. as supervisor of bacteriology research. For the past six months he has been engaged in

DR. CHARLES R. STUMBO

research work on antibiotics at Michigan State College and previous to that he was in charge of plasma processing work in the Michigan State Department of Health at Lansing.

Warner Names Hastings Controller

T. P. Hastings has been made controller of William R. Warner & Co., Inc. He has been with the company in various capacities for the past twenty-five years. In his new position, Mr. Hastings will be in complete charge of the recently established division of accounts.

Leduc with Tuvache

Bernadine de Tuvache, creator of Tuvache perfumes, has announced the appointment of Marcel Leduc as vice-president and general manager of Tuvache, Inc. Mr. Leduc will leave some time in November for France to open a business office and laboratory for Tuvache.

Cyprus Firm Wants Amer. Products

Manufacturers and exporters wishing to establish trade relations with Cyprus, will find Melcon Aleplian, P. O. Box 19, Nicosia, Cyprus, interested in representing American firms.

For Over 40 Years

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SPECIALTY & TUBE CO.
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Here's the amazing, improved gummed sealing tape that means better, more economical packing and shipping for you. VIPACO "6-Action" gummed tape is stronger, yet less bulky . . . a specially prepared glue gives even overall coverage and won't side-slip . . . unusual flexibility allows for gripping around corners . . . it sticks instantly without added pressure.

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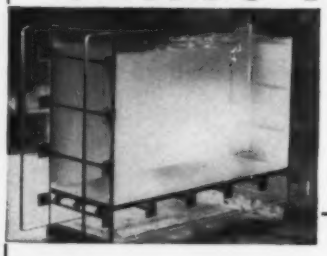

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Serum bottles and vials of Kimble Neutraglas — highly resistant to solvent action and chemical attack — suitable for all types of closures — offer utmost protection.

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HELPS PROTECT PRODUCTS such as drugs, infants' wear and toys, foods, cosmetics and many other items from contamination by airborne bacteria during every stage of manufacture. Also being widely used for more accurate inspection.

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Please send me additional information about Sperti U-V Electronic Installations, their advantages, and their applications.

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But perhaps (because after all, you don't live with plastics as we do) you *don't* know how many cosmetic manufacturers are planning postwar packaging now.

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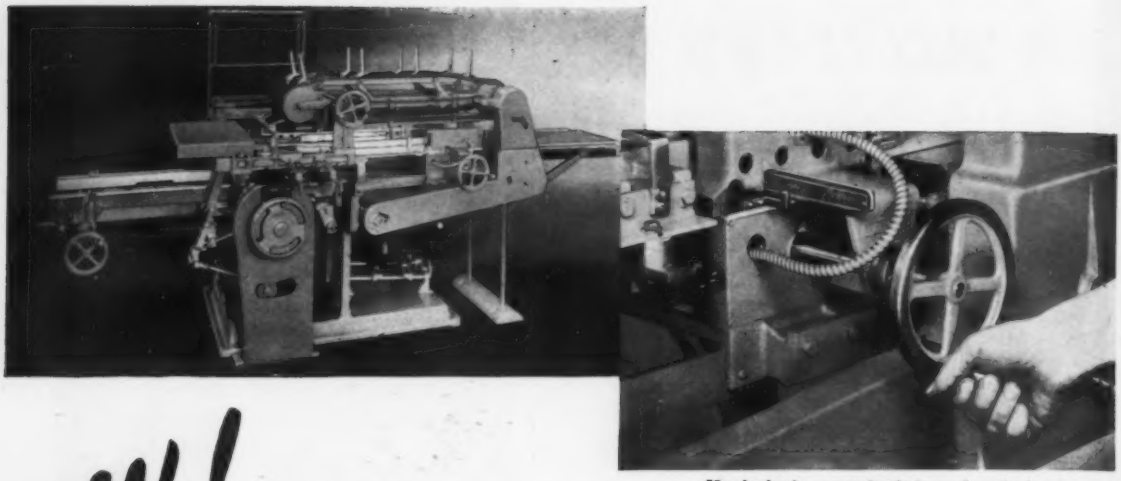

Hand-wheels, conveniently located, make it easy to adjust machine for a different size package.

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New features include:

Vertical paper slackener that saves floor space . . . Glue pots that are easier to keep clean and which accommodate the full size range of the machine without alteration . . . New spring-floating heater units of greater wattage . . . New transport mechanism that permits shorter discharge belts . . . Improved folding box which makes it easier to adapt an existing machine to a new package size. And it is more rugged and quieter in operation than ever.

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PACKAGE MACHINERY COMPANY

Over a Quarter Billion Packages per day are wrapped on our Machines

Production Forum

By Francis Chilson

Industrial Consultant

Ampoule Inspection

It is rather curious that any organization would undertake to finance a mechanical development without first submitting the proposal to engineers experienced in the industry who are qualified to pass judgment on the potentialities of the projected development. I refer to an appropriation of $25,000.00 that was made in an attempt to develop an electronic ampoule inspection machine.

In less high falutin' language, another attempt is being made to inspect ampoules by photoelectirc means. This method has been tried experimentally before and failed for obvious reasons. It is easy to see that electrical engineers without experience in inspecting ampoules would take on an assignment of this kind, but an engineer experienced in dealing with ampoules would shy from the assignment because there are so many factors for which ampoules are rejected that the possibility of developing means of detecting so many variables seems remote indeed. Photoelectric means will detect changes in color and also the passage of solid objects through the light source. Likewise, other electronic means similar to those used in radar will detect solid objects by impingement. But ampoules are not rejected merely for dirt contamination and discoloration; they are rejected for flaws in the glass; they are rejected for charring and other discoloration either of the glass or of the solution; they are rejected for glass particles and for floaters of various kinds such as filaments and fibre and clouds of flocculent material of the same color as the solution itself.

An experienced ampoule inspector has a pretty keen eye. Recently, in a well-known plant, the superintendent, alarmed by the high percentage of rejects amounting in this instance to 25%, tried to inspect the rejects himself. He found very few which contained foreign matter, glass particles or discernible discolorations. So, in order to check his inspectors, he sent a lot of rejected ampoules through with a new batch number to find out whether the inspectors were rejecting the ampoules because they actually saw things in them which were not in accord with the company's rigid inspection standards or were merely seeing things. When the lot came through again, it was discovered that the inspectors had rejected every ampoule without exception. Then, the inspectors were questioned as to why each ampoule was rejected and, unhesitatingly, they could point out what had led to the rejection in each instance.

I am whole-heartedly in favor of mechanical applications, especially on such tedious operations as ampoule inspection, but machines will never have the infinite capacity for self-adjustment that all variables can be detected automatically.

I think it is well within reason to develop equipment that will detect foreign bodies up to a point, but sometimes it is doggone hard to tell the difference between an actual foreign body and a small air bubble.

It is small comfort for any individual to know that nobody has yet developed the perfect cleaning system for empty ampoules, and that no one has yet developed techniques of filling and sealing so perfect that rejects are eliminated or minimized to a negligible per cent.

In my opinion, most manufacturers don't pay enough attention to the inspection of the empty ampoules before they are used. Ampoules are washed, as a rule, directly from boxes in which they are received and the only rejects that are made at this point are due to breakage which the washing operator can detect. At this point, the ampoules should be carefully inspected before they are washed, and in addition to broken ampoules, all those in which the glass is badly discolored or full of blow holes should be rejected before the washing takes place. I think we do far too much inspecting after the ampoules are finished and not enough beforehand.

After the washing takes place, I think the ampoules should be inspected again under a powerful light and with a magnifying glass. This will enable an operator to reject ampoules which contain slivers which adhere to the inside of the glass and those which contain very small air bubbles, etc.

After filling, sealing, sterilizing and checking, the ampoules must, of course, be given a final inspection. My experience with floaters, especially fibres, dirt and glass chips, is that in most cases, the contaminants

FROM PILLS TO PENICILLIN

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The first machine Stokes made was a bench-model Eureka tablet machine for pressing pharmaceutical "pills."

Ten years ago we assisted in engineering the first special high vacuum equipment which today makes it possible to produce in large volume the desiccated blood plasma, penicillin and other labile biologicals so vital in saving lives throughout the world. Thus a process which was a laboratory curiosity only a decade ago is now a major industry, with important applications in chemical and food processing as well as in the preservation of medicinals.

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were in the ampoules before they were filled. Of course, fibres can be picked up from filter papers and filter media of various kinds, but I think this can be minimized if, more generally, ampoule solutions were filtered by the usual means and then given a final polishing through some type of ceramic filter.

Recently, I saw a piece of metal screen developed during the war, containing 10,000 perforations to the square inch and capable of withstanding considerable pressure. This, when it is available, may be the answer to some of our problems.

Tablet Counter

Everybody in the trade is howling for tablet counting equipment. No manufacturer has yet developed a really good counting machine. By that, I mean a machine that is completely flexible as to tablet count, size and shape, over the range usually encountered in the

average pharmaceutical plant. The two standard machines commonly used in the trade are excellent machines as far as they go, but both are limited in range of adjustability for shape, count and tablet size.

Recently, an outfit in California brought out a slide counter made mostly of wood and plastics. Like all such machines, this unit worked all right on coated tablets but it wasn't worth a damn for anything else. Still, the outfit sold a lot of them and I have seen a number of these machines around the trade, but I have yet to find an instance of successful use, except on coated tablets. The machine illustrated in the attached photograph is known as the Zunino Tablet Counter. It was brought to my attention by Mr. B. T. Howiler, of Royfield & Company, for whom the machine was built and who praises it highly. The machine feeds tablets out of the hopper by means of a free riding vibrating plate. The tablets are carried forward into guide channels and from there into a discharge bar. The discharge bar operates through a cam area by hand and dumps 12 tablets per operation. The unit is designed so that counts up to 100 can be made, and it is claimed that one operator can turn out 400 containers per hour. The machine is made by C. Zunino Machine Works, 1678-16th Street, Oakland, California.

Incidentally, I don't believe it is possible now to manufacture the machine in quantities, and a deal is now being negotiated with an eastern machinery firm, so even if the machine appeals to you there may be some delay in getting it.

August Issue

I have just had a look at the August issue of this department and I cannot pass up the opportunity of expressing the opinion that it was lousy. Most of the material included in the department was made up of publicity handouts and were not written by yours truly. I want this made perfectly clear so that you will not think I am making wild claims for certain manufacturers. In the future, I am going to identify the handouts so that you will be able to take them for what they are worth. It has happened in the past on several occasions that claims were made for equipment which, upon investigation, were not substantiated. Actually, no one has blamed me for the failure of machinery manufacturers to substantiate the claims made in their publicity releases, but in the future, all the stuff that gets into this department will be earmarked so that you will know whether I am making the claim for the equipment or whether it is being made by the equipment manufacturer. There is a vast difference between the capabilities of a particular machine and the claims made for it by enthusiastic and imaginative advertising men.

Also, I must explain that the editor of this journal has a hell of a time with me because I am so busy and have so many clients in various parts of the country, that the poor guy has the devil's own time finding me, not to mention getting my material in on time to meet the printer's deadline. So, that when the editor is confronted with a deadline and I haven't delivered my stint, he has no alternative but to fill my space with whatever printed material is available, hence, the August issue. God knows my own contributions are bad enough sometimes, but the unsolicited handouts on equipment are usually worse.

Eye-Relief

In a previous month's installment I had sworn I would write nothing more about building construction, but to save me, I can't help it. Since V-J Day, all my clients who have been contemplating the erection of new plants or additions as post war projects—something we might get at six or twelve months hence—suddenly want these new facilities *now*, PDQ, but quick! So, I have no alternative but to go along jotting down suggestions which might be helpful to all of you.

One of the construction elements always discussed —sometimes vehemently—is "outside light". Every-

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The Dorr Company is well qualified to assist you in your process water problem—not only by its pioneering research on resinous ion-exchangers since they were first introduced in the United States, but also by its long experience in a wide variety of industrial processing fields. Dorr service extends from analysis in the field to supervision of plant construction and initial operation. *For further information phone, write, or wire your nearest Dorr office.*

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body wants outside light, preferably north light and since a building has four sides, only one of which may face the north, it is a hell of a job to satisfy everybody. But since nearly everyone indicates such a preference, there must be a psychological reason for it.

I think, at last, I know what it is. I think we have all been guilty of using the term "outside light" in a slip-shod way. Outside light as such isn't worth a damn, as lighting. Daylight varies continually and when people's workplaces are located more than fifteen feet away from a window or a monitor, they have to mix artificial light with the daylight in order to get enough light anyway and such a mixture is not, as a steady condition, good for the eyes. People located thirty or forty feet from natural light sources have to use artificial light all the time anyway. In many plants that were built before the war huge areas of glass in windows and monitors were provided—and then equipped with shades to kill the glare when the sun is bright! There's no sense in that is there?

As to the psychological factors involved, I think people have need of being able to see a considerable distance in order frequently to re-focus their eyes to relieve the strain of confining eye work. Also, I think many people, if not most, suffer from some degree of claustrophobia—that "shut in" feeling.

The need to re-focus the eyes frequently suggested itself by the experience of one of my friends who was an engineer on the Alcan Highway. He told me that in the city where their headquarters were located there was no place large enough to house so many engineers and clerks, and the only available place was the basement of a large church. This was taken over, repainted, lighted adequately and artificially ventilated. Three months after they began work sixty per cent of the personnel were suffering from more or less acute eye strain. After studying the situation, the Army doctors (after first blaming fluorescent lighting) came to the conclusion that the trouble was caused by the fact that, in so small a perfectly lighted area, it was not possible to re-focus the eyes. When provisions were made to knock a few small windows into the foundation wall, the complaints diminished.

I am not aware of any such complaints from the big windowless war plants because these plants are so large and so filled with shadows from equipment, that a person glancing up from his work automatically re-focuses his eyes without knowing it. (This, indeed, is another good argument for eliminating partitions.)

Claustrophobia may itself be caused by the inability to refocus the eyes. It would be interesting to investigate, with a competent opthamologist, whether or not this is so and it would also be interesting to find out the minimum distance a person must see to re-focus completely.

I believe it possible to eliminate claustrophobia and to provide conditions which will permit adequate eye-refocusing by artificial means. This might be done inexpensively by varying the intensity of wall colorings; by interpolating design patterns along the top of wall areas; or as I suggested previously, by automatically softening or changing the intensity of all artificial lighting at intervals during the working period.

At the Chattanooga Medicine Company we may have accomplished this purpose to some degree by providing different color schemes for different departments so that an employee passing from a work area to a rest room or cafeteria, passes into a totally different color environment.

However, an experience I had recently leads me to believe that in new construction, the vistas necessary for adequate eye-relief can be provided artificially. The walls of one of the restaurants in the Stevens Hotel in Chicago are fitted with semi-circular niches. The niches are equipped with sash and on the curved rear walls of the niches are mounted colored photographs of various scenes along the Chicago water front. The niches are illuminated with fluorescent lights so that the light intensity within the niches is several times that in the open room. The optical illusion is perfect. Sitting in the room you'd swear you were looking out of windows at the lake. Trees and skyscrapers can be seen in the distance along the curved shore or the lake; you can see boats of various kinds on the lake and along shore. There is certainly no shut in feeling about such a place and I have no doubt that the eyes re-focus adequately on the "distant" scene.

Why couldn't this be done in relatively small factories? The walls could be built without openings except for doors and the niches cast into them. The art work need not be expensive; young artists can be hired for a dime a dozen. Photomontages colored with an air brush would be good enough. The treatment would have to be varied somewhat for small areas, which must necessarily be partitioned off, so that those working close to the niches would still have a distant vista. It might be said in closing that thousands of young men have been trained in camouflage by the Army and they, no doubt, would be glad of opportunities to exercise a skill which has no apparent peace time purpose.

Nickel Resistance

In this new revision of "The Resistance of Nickel and its Alloys to Corrosion by Caustic Alkalies," the Development and Research Division of the Internation Nickel Company has assembled and discussed the results of recent plant and laboratory tests on metal corrosion by caustic soda and other alkali solutions. Many of the tests described were made by exposing the samples of the metal within equipment in actual operation. In every case the caustic concentrations and temperatures studied were selected for their direct relation to the problems faced by the commercial maker and user of caustic in various fields.

The corrosion data, showing comparative results on Monel, nickel, Inconel, "L" Nickel, nickel cast irons, cast iron, mild steel and stainless steels are summarized in 36 tables. The effects of oxidizable sulfur com-

pounds, sulfur "shading," and stress are considered in detail. Special sections are devoted to caustic soda manufacture, transportation equipment, and the problems of caustic users in the viscose rayon, soap, pulp and paper, and petroleum refining industries.

This 20 page booklet, a brief but comprehensive special survey, will be sent on request to chemical engineers, operators of caustic equipment, or other metal users by the International Nickel Company, Inc., 67 Wall Street, New York 5, New York.

Economy in Air Conditioning

A new data folder by the W. B. Connor Engineering Corp., 114 East 32nd Street, New York City, contains an interesting case history of the application of DOREX Air Recovery equipment to an existing system. With facts, figures and installation drawings, Merle Bennett, Chief Engineer of the Detroit Bank Building, tells how fuel, energy and equipment were saved. Besides the case history, it contains data on ventilation requirements and a typical cost comparison chart showing the savings in money, material and equipment on a new installation. The folder is of the standard file size and may be kept for ready reference.

Telescopic Towing Handle

Lyon-Raymond Corporation, 2096 Madison St., Greene, N. Y., have added another optional feature—a telescopic towing handle—to their popular Hydraulic Elevating Table. Extended, the handle provides means for easily moving the table from place to place. Collapsed, the handle is below and under the table top where it will not interfere with operations involving the transfer of materials across the table or the support of overhanging pieces.

The table can be readily maneuvered without the use of the handle, but long hauls are easier with it.

Other optional features have been available for some time. These are: (1) Two-speed pump in place of single-speed; (2) Retaining bars; (3) Removable roller top; (4) Indexing device. Like them, the telescopic towing handle is designed to further increase the usefulness of the Hydraulic Elevating Table in a wide range of material handling operations.

New Barnstead Portable Water Bath

The Barnstead Still and Sterilizer Company, Incorporated has designed a new Electrically-Heated Portable Water Bath featuring an Automatic Bottle Feed that makes it portable. Other desirable improvements embodied in this utility apparatus are: an Inside Shelf, for Immersion Heating; Rod Clamps permanently mounted; a handy test tube holder; flush-mounted switches, and a pilot light. The Bath has a Monel Metal exterior and is lined with tinned copper. Measurements are: diameter 15", height of body 7", height to top of bottle 15". It requires a bench space of 18" x 21".

The Automatic Bottle Feed . . . a new idea in water baths . . . will operate for more than 10 hours on low heat and 4 to 5 hours on high heat. By using distilled water in this bottle, scale formation may be prevented inside the bath. Rubber hose connectors are provided for continuous operation from running water supply if desired. The test tube holder has 14 holes of 5/8" diameter for tubes. Openings in concentric

covers range from 1-3/16" to 5-3/16" in 1" intervals. The rod clamps save working space when setting up for extractions, concentrations, etc.

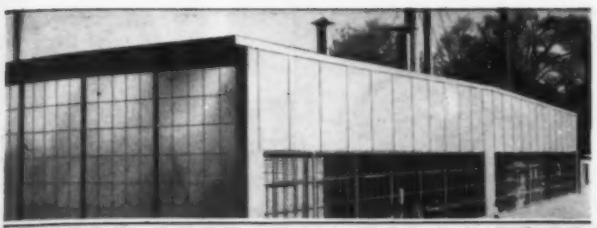
The Water Bath is now in the hands of Barnstead dealers throughout the country.

Who Gets Credit

The mad scramble to get credit for particular suggestions or ideas often amuses me. In every organization, there usually are several individuals who are credit hounds. The more ideas they have and the more enthusiastic they are, the more likely they are to be credit grabbers. Some men are more interested in getting credit for an idea than they are in putting it into effect.

A long time ago, I resolved the problem for myself by scrupulously refraining from claiming credit for innovations introduced to my clients. I made it a point when I am on a job to give the men on that job all the credit for everything because I know that once I have started a job, the trade in general will give me credit for the whole job. Since the trade, in general, and not any one firm in particular, is providing my livelihood, trade credit is all I want, and all I need to keep my business going at full speed.

I remember one engineer who was so fearful that he would not be credited for his contributions to his employer, that he kept a little black book and every time



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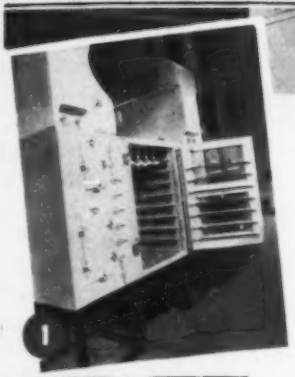

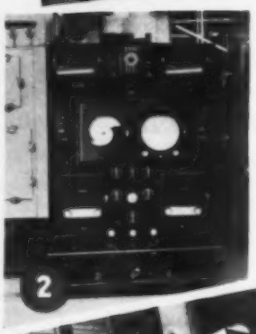

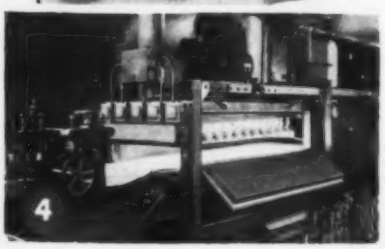

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2.—Control Panel for tray oven equipped with timing device.

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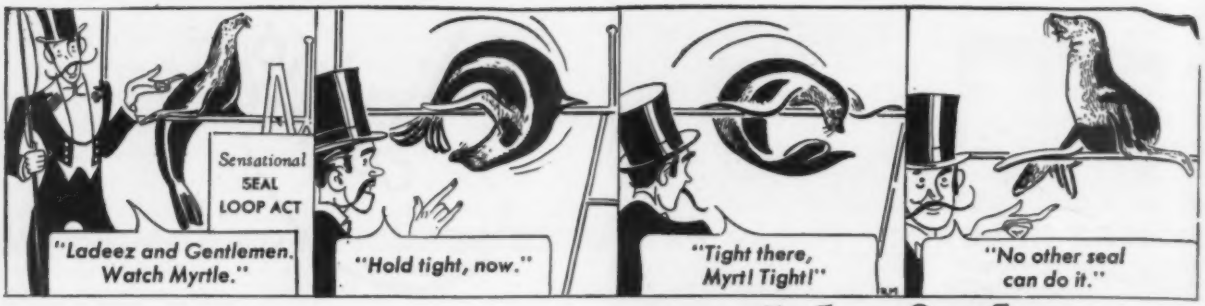

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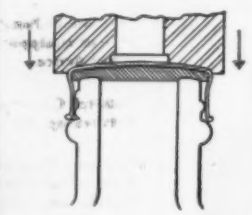
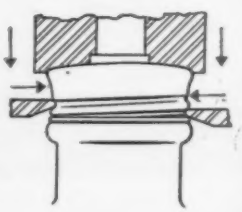


1. Plain-skirted Alseco Seal is seated squarely on container. Under stationary top pressure, container lip is embedded in cap liner evenly all around, effecting the seal.



2. While the seal is thus held under pressure, threads are Rolled-On to conform exactly with threads on container. Each seal is tailormade, fits perfectly, seals tighter.

ALSECO

TAILOR-MADE OF ALCOA ALUMINUM

SEALS AND SEALING MACHINES

ALUMINUM SEAL COMPANY · 1223 THIRD AVENUE · NEW KENSINGTON, PENNSYLVANIA

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

he made a suggestion, no matter how trivial, he would note the suggestion and the circumstances of the contribution together with the date on which the suggestion was made. Periodically, he recapped the little black book in the form of a report for his immediate superior. He used to spend more time writing his diary than he did in getting his ideas and others that came to him into practice, and eventually, in spite of a plethora of ideas and suggestions, he got fired. A mediocre idea that is put into practice is a damn sight better than a brilliant idea which nobody does anything about.

Credit grabbing is petty because no idea is entirely original. Even a patentable invention, while it crystallizes in the mind of the inventor, it's still a compound of his own idea and the experiences, observations and contributions of other people. We are all very fond of our brain children but if we are analytical enough, we will realize in thinking about the genesis of our brain children, that the seed was placed in the womb of our minds by someone else. We merely nurtured it and eventually hatched it.

When an outside engineer goes into an organization he acts primarily as a catalyst. By reason of his experience in the industry, he may prevent the commission of costly errors; his work may result in vastly increased potential capacity or in substantially decreased operating costs. But if he is fair-minded, he realizes that regardless of how good his ideas are or how wide his experience, he cannot alone achieve worthwhile results. He cannot do more than make the initial suggestions; the management must accept the suggestion and put them into effect. Therefore, to the management and its representatives must go all the credit for the execution of the work and the results it achieves. The experienced consultant recognizes that many good ideas lie dormant in every organization and are not put into effect until he comes along, because the management, taking cognizance of the limited or biased experience of its own staff, is reluctant to appropriate a substantial amount of money to put such ideas into effect. But once the ideas have been considered and accepted by an experienced outsider, management will instantly make the necessary appropriation. So, the fair-minded consultant will refrain from claiming credit for such ideas. Moreover, his own direct contributions have to be discussed and accepted by management before they can be put into effect. So, again, the people who do something about these suggestions are the ones who should get the credit within the organization.

What has been said here applies in substance to internal operations as well. I have sat in meetings with small minded superintendents who passed along to the top management various suggestions and ideas which I knew had previously been obtained from foremen down the line, but they lacked the intellectual integrity to admit to Mr. Big that they got the ideas in the first instance from Joe Doakes.

I have been at meetings a countless number of times where even my own suggestions, which had previously been made to certain executives, were passed along to the management as the original contributions of these executives. This doesn't bother me in the least, because I want the executives with whom I work to get all the credit for what is accomplished, but I think it is damn small potatoes when an executive up the line snatches credit for suggestions and ideas which he gets from his subordinates without giving those subordinates credit.

I have been in at meetings a number of times when executives calmly took credit for ideas in the very presence of subordinates who had originated the ideas. I have felt sorry every time for the poor devils who had to sit there and take it, because they were in no position then or later, to remind their boss that he had stolen their brain children, of which they were justly proud.

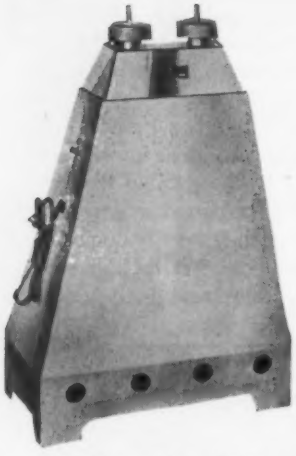
Two Thousand Pound Hydraulic High-Lift Truck

Employing the same light-weight welded tubular and formed plate construction used in their 1,000 lb. capacity unit, LYON-Raymond Corporation, 2381 Madison Street, Green, N. Y. have added a 2,000 lb. capacity Hydraulic High-Lift Truck to their line.

Its light weight—about one-third less than conventionally designed portable elevators—makes the truck very suitable for transferring materials as well as for stacking and tiering.

The standard stock model has a platform 30″ wide by 36″ long with an elevating range from 6″ to 60″ above the floor. Ease of movement is provided by Timken equipped 10″ diameter front and 5″ diameter rear wheels. A foot operated floor lock, making two-point contact with the floor, will hold the truck firmly in position when desired. A two-speed hydraulic hand pump, as illustrated, is standard equipment or a motor driven hydraulic pump may be furnished.

COMPANION SEMI-AUTOMATIC MACHINES



E-Z Cleaner is a bottle cleaner for cleaning new glass. Machine uses compressed air and is furnished with . Compressor and Motor. Easily connected to lighting circuit. Floor Space—27 x 14 in.

For Efficient Cleaning and Filling of Containers

These two machines will clean and fill 50 to 75 gross of containers per 8-hour day, depending upon size of containers and dexterity of operator.

They are both 2-Tube Machines and handle two containers at a time. Are portable and come furnished with cord and plug for attaching to lighting circuit. Both are fully automatic in operation except for placing and removing of containers by operator and require only ordinary skill for efficient operation. They serve efficiently not only for small producers, but in larger plants as well for use on special runs. The same carefulness in details and efficiency in construction is built into them, as is found in our larger fully automatic and high speed bottling machinery.

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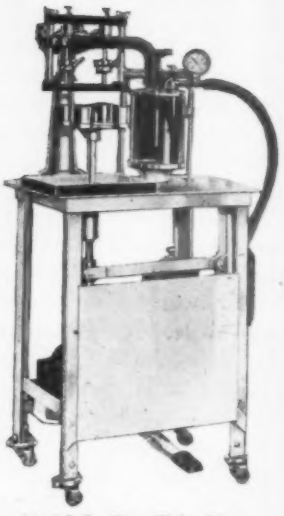

Model B, Two-Tube Vacuum Filler. An ideal filler for filling from any tank, barrel, jar or 5-gallon bottle on floor. Floor Space required 30 x 18 inches.

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...."HAGERTY HANDY FILLER"

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The most practical hand filler for creams, lotions and liquids.

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Two questions: (1) how many of these ten simplified operations are important in your business? (2) how many could be handled faster, better, at lower cost—*with temperature controlled* by application of air conditioning, refrigeration or heating equipment?

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BUY . . . and hold . . . VICTORY BONDS

INDUSTRIAL REFRIGERATION
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. . . And even if we could, what would we do with all those rabbits?

Seriously, nothing would please us more, than to induce enough S & S filling, packaging and wrapping machines to materialize right out of thin air, to fill the back orders you people have in our files.

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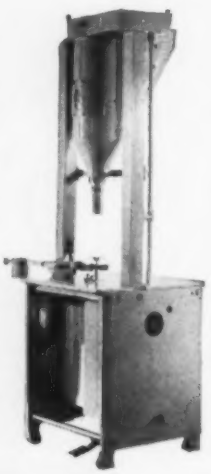
The sudden end of the war found our stockrooms bare of both machines and parts, our entire output during the emergency having been sold subject to priorities. We have increased our production facilities . . . added to our manpower and are doing our best to meet the pent-up demand of war years now flooding us with orders.



It will pay you to wait for an S & S machine—the *right* machine for the *right* job. Illustrated is the Universal Filler, for any powder, granular product or paste. Fills a wide variety of materials . . . everything but solids and liquids.

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FILLING • PACKAGING • WRAPPING MACHINES

Speeds to suit your needs—15-30-60-120 per minute

"Better machines for better packages"

EPPENBACH HOMO-MIXER MAKES DISPERSIONS WITHOUT INCORPORATING AIR

1. Turbine head near bottom of tank starts a converging horizontal flow which carries sedimentary material into close-fitting rotor vanes.
2. Inflowing "slurry" is violently agitated at high velocity and projected upward toward surface.
3. A submerged baffle-plate deflects the rising current horizontally toward sides of tank, thence flowing downward toward bottom.
4. Rapid down-flow submerges and wets out floating material, including additives being fed into the mix.
5. The entire batch is deflocculated resulting in a perfect dispersion.
6. No surface boil . . . no vortex . . . NO AIR DRAWN IN.

The Eppenbach HOMO-MIXER is built on an entirely new principle. Whereas ordinary mixers create a vortex in the material that pulls in air, the HOMO-MIXER draws only from the bottom of the tank. Entrapped air tends to cause separation and splitting, and frequently oxidizes the product.

Furthermore, the HOMO-MIXER does not require a high head of liquid to give efficient mixing action. It is possible to process material in a tank at a depth just great enough to cover the mixing head. Fits tanks of all types and shapes . . . no clamps required . . . no special angle of installation.

Write for complete details of this mixer—"the only one of its kind." Ask for Catalog No. 402.

Eppenbach HOMO-MIXERS are available in a complete range of sizes for laboratories and production plants. Capacities range from 2 to 2,000 gallon batches from ¼ to 25 H. P.

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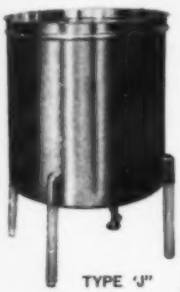
Regardless of what your chemical storage or mixing problem is, a San-I-Tank can simplify it for you—economically and safely. All San-I-Tanks are built by tank specialists. Constructed throughout of 18-8 Stainless with all welds ground smooth and polished. Completely self-draining, sanitary and rust proof. Many extras available such as covers, motors, agitators, etc. Let our engineers give you recommendations on your tank problems.



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MANY TANKS IN STOCK FOR IMMEDIATE SHIPMENT — *Tell Us Your Requirements.*

We carry a complete line of stock sizes in San-I-Tanks. If we do not have a Standard tank to fill your need our Engineering staff is at your disposal to design and build a tank best suited to your requirements. If it's a tank problem, get in touch with Metal-Glass today,—we can solve it for you.

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CLEAR, EASILY READ, PERMANENT STENCILED ADDRESSED SHIPMENTS move through the Shipping Room faster and are speeded all along in transit.

THESE NEW DIAGRAPH-BRADLEY FOUNTAIN STENCIL BRUSHES . . . each represent major advancements in stencil brush design and efficiency . . . featuring: STURDY ALUMINUM CONSTRUCTION • LIGHT WEIGHT • LARGE FENDER GUARD to prevent ink on bristles getting on table, clothing, etc. • LARGE INK CAPACITY • ALWAYS READY FOR USE. THE PENACTION FEED* operates like a fountain pen • THE SIDE BUTTON STREAMLINER* is controlled by a diaphragm valve • CAN'T LEAK.

*Pat. App. For

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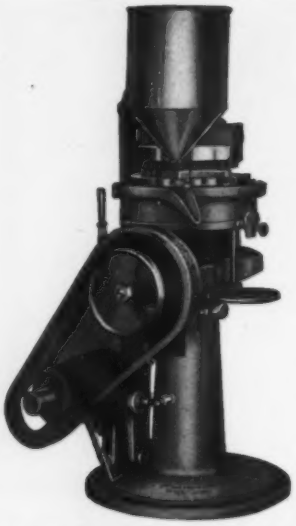

A NEW COLTON ROTARY TABLET PRESS
SERIES 200-25 ROTARY TABLET PRESS

The design of the Series 200-25 Tablet Machine is an outstanding engineering achievement, the culmination of years of experience in building tablet machines. This compact machine incorporates refinements that provide an entirely new standard of performance for this type of equipment.

ARTHUR COLTON COMPANY

2620 East Jefferson Established 1884 **Detroit, 7, Mich.**

AUTOMATICALLY YOURS

New markets, wider distribution, await the manufacturer who packages in small paper packets. Tablets, powders, pills, soaps, and scores of drug products in Brown packets, filled and sealed automatically on Brown equipment, have made selling history. Let us test a small quantity of your product for you without obligation.

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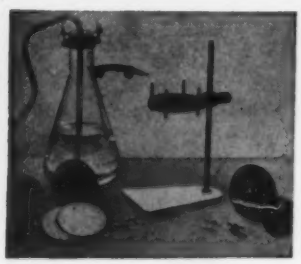

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Laboratory Filters

This laboratory filter meets the tremendous demand for the pyrogen retentive type unit which is so necessary in many new test lots and small runs. Constructed in bronze, plated, or in stainless steel. Permits double filtration in series. Has built-in stone fibre eliminator. A minimum of parts make unit easy to clean and simple to assemble. Available in 4" and 8" diameter sizes.

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Increased production facilities now make these high grade pads more readily available.

Reasonable deliveries.

Send at once for sample loading for your filter.

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This new Triangle Auger Packer speeds powder packing because filling starts automatically as soon as the container reaches the filling position. And filling stops automatically too.

Simplifying the operator's job in this way makes this machine 15 to 20% faster than old style Auger Packers.

Production with one operator is 20 to 30 packages per minute, each package accurately and neatly filled. This new Model U-1 can easily be changed from one product to another and will fill from 1 oz. to several lbs. into bags, cans, jars or cartons.

It's easy to clean, too. Loosening 3 nuts removes the packing bowl for cleaning the entire packer, a time saving feature when the machine is used for various products.

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A SIX MONTH'S RECORD

—over 2,000,000 pounds ground of over 60[illegible]

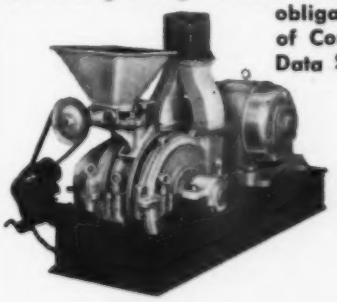
Typical installation of Stainless Steel No. 2TH MIKRO-PULVERIZER in large pharmaceutical plant, discharging directly to mixer below, eliminating rehandling of material.

One pharmaceutical manufacturer reports a total of over two million pounds of material of at least six hundred different products ground in their five MIKRO-PULVERIZERS during a six-month period. In addition to making these quick changes from one product to another without contamination, less manpower was required than before.

The complete ease and quickness with which a MIKRO can be cleaned, makes possible such records and advantages. And, with their small tolerance of particle-size limits, the MIKRO adequately meets today's demand for finer and more uniform products.

Accurate particle-size control, elimination of dust, lower operating costs, and the fact that every MIKRO is built to suit a particular application—have caused more and more firms in the drug and cosmetic field to turn to it as the answer to their difficult reduction problems.

Our test grinding facilities are available without cost or obligation. Send for your copy of Confidential Test Grinding Data Sheet.



THE MIKRO-ATOMIZER
A new mechanical screenless pulverizer for producing ultra-fine powders of 1 to 25 micron particle size.

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NOW...2 TYPES TO MEET MOST PULVERIZING NEEDS

MIKRO-PULVERIZER (FINE) -ATOMIZER (ULTRA FINE)
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ADVANCING THERAPY

Burn Treatment

According to Wanamaker in the *U. S. Naval Medical Bulletin* (44:1239, 1945) the following procedure is generally employed in one naval hospital for treating burn casualties. Generous, frequent plasma or whole blood transfusions are given when indicated. Saline solution is given preferably by mouth. Rigid, sterile surgical technic is used in dressing burned areas and the dressings are changed infrequently. Split skin grafts are utilized early to cover third-degree burn areas.

To cover burn areas, gauze dressings are impregnated with the following:

	Gm. or cc.
Urea	10.0
Oxyquinoline	4.8
Chloretone	19.2
Liquid petrolatum	128.0
Olive oil	50.0
Wool fat	400.0
Petrolatum	500.0

A paraffin mixture which may be sprayed on the burned area after two or three dressings of the preparation above, consists of:

	Gm. or cc.
Menthol	0.1
Sulfanilamide powder	50.0
Heavy liquid petrolatum	150.0
Cod liver oil	50.0
Paraffin wax	670.0
Petrolatum	250.0

Curare for Poliomyelitis

In view of the prevalence of poliomyelitis, N. S. Ransohoff (*J.A.M.A.* 129: 129, 1945) feels that a preliminary report on the use of curare in the acute stages of this disease is warranted. Presenting case histories of four children with infantile paralysis in whom the administration of a curare preparation afforded striking improvement of symptoms, he voices the hope that other observers will use this drug. The ideal dosage is not yet known but it is felt that the quantity used, 0.9 mg. per kilogram, may have to be increased in more severe cases and in older children.

Procaine Injections Relieve Shingles

The intense pain of herpes zoster, more commonly known as shingles, can be relieved instantaneously and permanently by a technic known as paravertebral procaine block, according to T. Findley and R. Patzer (*J.A.M.A.*128:1217,1945). The treatment, which consists essentially of injections of procaine hydrochloride or related anesthetic drug into appropriate nerve masses, is not new, but few physicians appear to be acquainted with its efficacy and speed. Of the total of 29 cases so treated, including the four currently reported, only two failed to experience prompt and lasting relief from pain. In the opinion of Findley and Patzer, this method makes all other procedures obsolete.

Vitamin K for Urticaria

Vitamin K appears to be of definite value in the treatment of urticaria or hives according to the observations of J. H. Black. In the *Journal of Allergy* (16:83, 1945) he reports that three hundred and five cases of chronic urticaria were studied by the usual methods, including skin tests, trial diets, search for infections, and the avoidance of drugs. One hundred and fifty-six of these patients who were not relieved as a result of this approach were then given vitamin K, orally. At first 2 mg. was used as the daily dose, but when this dosage did not relieve all the patients, 6 mg. was adopted as the routine daily dosage of synthetic vitamin K—2 mg. being given before each meal. Of the patients with prolonged prothrombin times, 78 per cent were relieved and, of those with normal prothrombin times, 32.5 per cent were relieved; of a group in which no prothrombin times were determined, 48 per cent were relieved. The duration of treatment varied from one to four weeks; 75 per cent of those who were relieved by this means were free from lesions within one week. In 31 per cent who had a relapse the readministration of the vitamin brought about relief.

Ringworm of the Scalp

In response to an inquiry on the latest and most successful treatment of ringworm of the scalp, the "Ocuries and Minor Notes" Section of the *J.A.M.A.* (128:697, 1945) points out that the present rather widespread epidemic of tinea capitis the offending organism in most cases is *Microsporum audouini*. Infections caused by this organism are extremely resistant to treatment. The average case may last for eight or nine months. The most rapid and successful method of treatment is epilation of the diseased hair by means of the x-rays. This, however, is a most delicate operation and should be done only by some person experienced in this type of treatment.

Treatment with topical applications is slow, but if the hair is clipped short an ointment containing 10 per cent iodine crystals in aquaphor can be used twice daily. This should be applied with a soft toothbrush morning and night, and as soon as a reaction occurs and the scalp becomes tender, treatment should be suspended for a few days and then resumed. Another ointment of value is composed of precipitated sulfur 6 Gm., salicylic acid 3 Gm., castor oil 6 cc. and petrolatum to make 60 Gm. Still another is ammoniated mercury 3 Gm., salicylic acid 2 Gm., petrolatum 30 Gm. and hydrous wool fat to make 60 Gm.

Penicillin in Vincent's Angina

Two reports, both appearing in the July 7, 1945 issue of the *Journal of the American Medical Association*, suggest that penicillin may have a most valuable role in the treatment of Vincent's angina, better known as trench mouth. In the first paper, that of B. M. Schwartz, it is reported that penicillin, given intramuscularly, was of definite value in the treatment of fourteen cases of this mouth disease. The recommended dose is 100,000 units administered intramuscularly in 20,000 unit doses every three hours. In mild cases

Ammonium Thioglycollate

by SUMMIT

SUMMIT CHEMICAL PRODUCTS CORPORATION is the oldest and largest manufacturer of Ammonium Thioglycollate. Summit developed Ammonium Thioglycollate from a laboratory curiosity into a commercial product that is the basis of the most successful and most widely used cold wave solutions.

Ammonium Thioglycollate by Summit is manufactured in a large and modernly equipped plant. Its unvarying high quality reflects the rigid and exacting scientific control of each step in its manufacture. Its reasonable price reflects the concomitant economies of large-scale production. Its preference by the leading manufacturers of cold wave solutions reflects its

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2...STABILITY
3...PURITY
4...FREEDOM FROM IRON AND BY-ODORS

Summit has also developed clouding and perfuming agents for cold wave solutions. Samples are available upon request.

Inquiries are invited from manufacturers technically equipped to manufacture cold wave solutions. Summit does not supply ready-to-use solutions, in bulk or otherwise.

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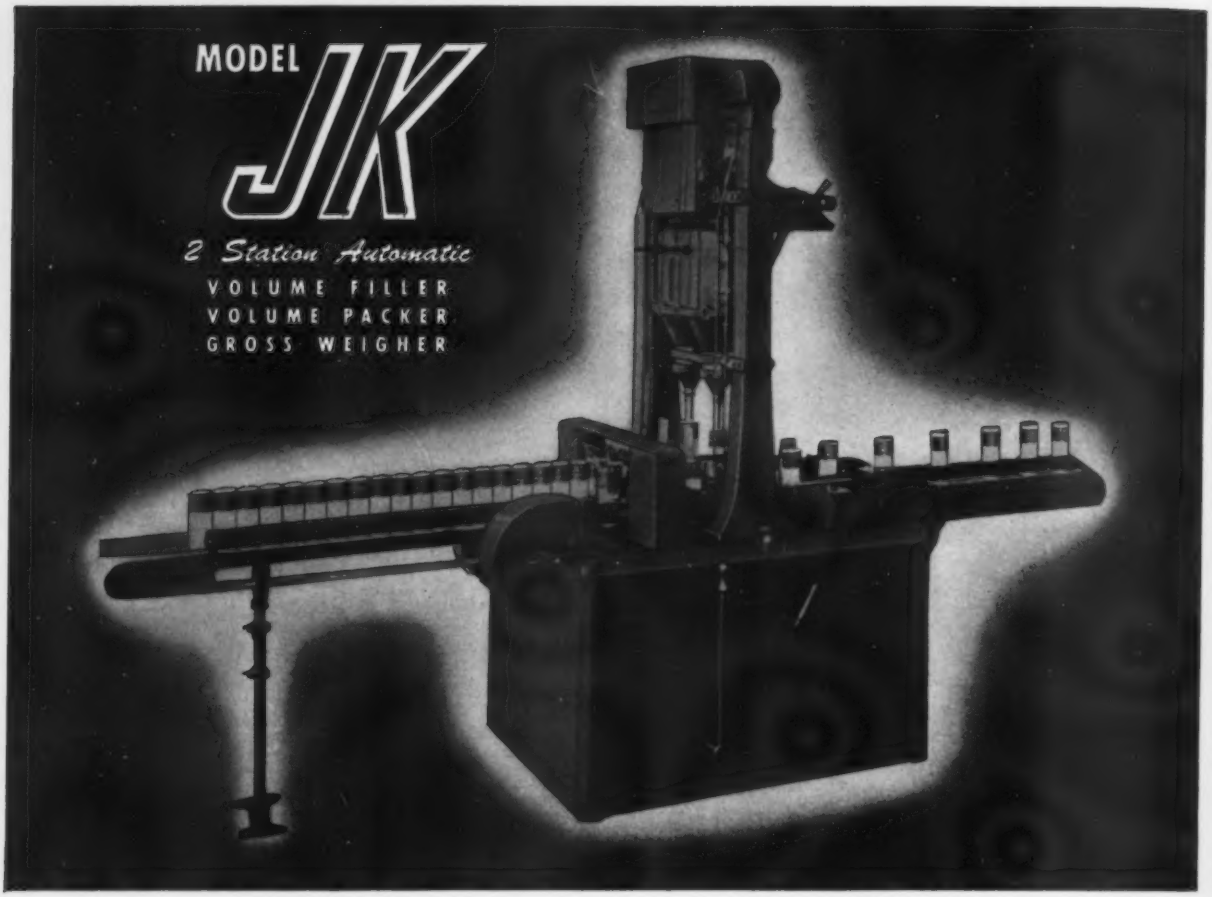


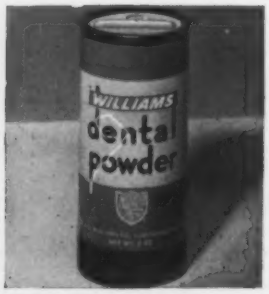
. . . for all types of powdered, granular and paste materials

The Model JK is an Automatic Packer that will also operate as a Volume Filler or Gross Weigher. This machine fulfills every requirement for advanced means of automatically handling powdered, granular and paste materials of almost all descriptions.

The Model JK has two filling stations. When the machine is used as an Automatic Volume Packer the empty containers are elevated, causing the actual filling to take place under the amount of controlled pressure suitable for the type of material and the size of container into which it has to be packed. This same principle is used when the machine is equipped as a Packer-Weigher, except that the main portion of the contents is packed under pressure, the remainder finished by weighing for accuracy. When the machine is used as a Volume Filler or Gross Weigher, provision can be made to incorporate a vibrating type of settling device to settle the material after filling.

The machine can be equipped for intermittent conveyor motion to facilitate handling of oval or irregularly shaped containers. With this intermittent motion, the conveyor moves just enough to deliver one container at the transfer station, thus preventing climbing and piling up of the containers.

The many new automatic features, plus the speed and accuracy of the JK, soon pay for the machine through savings on labor costs alone. It will pay to get full details and specifications — there are many features never available before — write today for bulletin which gives complete data on the Model JK!



Filled automatically on the JK at the rate of 60 per minute.

Send U.S. details on any of your packaging problems —we have the machines and the engineering background to help solve them.

US *Automatic Box Machinery Co. Inc.*

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smaller doses may suffice, but in unusually severe cases more penicillin may be needed.

The second report, by P. L. Shallenberger, E. R. Denny and H. D. Pyle, indicates that local therapy with penicillin is highly effective in the treatment of this infection. Their experiences seem to justify the conclusion that topical application of penicillin in a concentration of 500 units per cc. applied four times daily is a completely and rapidly effective therapeutic procedure in the treatment of Vincent's disease.

Scopolamine for Airsickness

A preventive and curative effect has long been ascribed to scopolamine in seasickness. The pharmacologic rationale for the use of scopolamine in motion sickness is based on its anticholinergic activity and its well recognized sedative and tranquilizing central effects, but the actual mode of action is unknown. In contrast to atropine, to which it is closely related, scopolamine in therapeutic doses produces little or no mydriasis, cycloplegia, tachycardia or suppression of salivation and sweating. Because these properties indicate that the drug is peculiarly adapted to use in aviation J. L. Lilienthal Jr. (*J. Aviation Med.* 16:59, 1945) investigated the effects of scopolamine hydrobromide on motion sickness in air crafts. Working with a group of aviation cadets, the use of scopolamine reduced airsickness attacks from a level of 7.5 per cent in the control group to a rate of 0.5 per cent when the drug was given. Lilienthal therefore concluded that scopolamine hydrobromide in doses of 0.6 mg. administered perorally thirty to sixty minutes before flight is a potent preventive of airsickness with insignificant side results.

Penicillin in Iodized Oil for Lung Diseases

The instillation of iodized oil as an aid in X-ray diagnosis of bronchiectasis, sinus tracts and other conditions in a well established procedure that suggested to M. J. Romansky, D. J. Dugan and G. E. Rittman (*Science* 102:255, 1945) that the addition of penicillin to the oil might produce a valuable therapeutic aid in such conditions. Calcium penicillin was placed in a sterile mechanical blendor and a sufficient quantity of sterile 40 per cent iodized oil added. The mixture was blended for from 10 to 15 minutes; the final suspension containing 1,500 units per cc. Under various conditions of storage, the preparation maintained its potency for 60 days.

Initial experiments on rabbits indicated the practicability of using the combination locally in the lungs of human patients. Without yielding definite conclusions, these clinical studies indicate that while the combination does not seem capable of "curing" advanced pulmonary suppurations, it does provide a distinct possibility that the bacterial flora in the diseased lung may be altered and make subsequent surgical intervention safer. Penicillin iodized oil may also be of value as a palliative treatment in patients who are unsuitable risks for radical treatment.

Streptomycin in Experimental T.B.

The data presented by M. I. Smith and W. T. McClosky in *Public Health Reports* (60:1129, 1945) leave no doubt that the antibiotic, streptomycin, is a highly effective chemotherapeutic agent in checking and retarding the normal course of tuberculosis infection in guinea pigs. The daily intramuscular injection of 5,000 units of streptomycin for a period of 90 days in guinea pigs infected with a human strain of tubercle bacilli has produced a chemotherapeutic effect superior to that obtained with 0.5 gm. per kg. promin given orally for the same length of time. Since the dose of promin used is about half the maximum tolerated dose while streptomycin is less than one-twentieth it appears that streptomycin has a chemotherapeutic index better than 10 times that of promin. It also seems possible that by increasing the dose of streptomycin and with better methods of administration its chemotherapeutic effectiveness may be enhanced. Using a suitable combination of streptomycin and promin it was possible to obtain results which, under experimental conditions, have not been obtained previously.

Penicillin X

Two reports appearing simultaneously in two journals describe work comparing penicillin X with penicillin G. In one of these reports, published in the *Journal of the American Medical Association* (129: 257, 1945), E. M. Ory, M. Meads and M. Finland explain that several forms of penicillin have been identified in cultures of Penicillium notatum. Three of these, known as penicillin F, G and X in this country and as penicillin I, II and III respectively in Great Britain, have been isolated in crystalline form. Commercial penicillins prepared from deep vat cultures consist almost entirely of penicillin G, but those prepared from shallow surface cultures in flasks may contain appreciable amounts of penicillin X varying up to 20 or 25 per cent.

In their work, penicillin X was compared with penicillin G with respect to sensitivity of pathogenic organisms and serum levels. It was found that when tested simultaneously with preparations containing 65 percent or more of penicillin X and with commercial lots which consist almost entirely of penicillin G, most strains of group A hemolytic streptococcus, gonococcus and meningococcus were from two to eight times more sensitive to penicillin X, most strains of pneumococcus and Streptococcus viridans were twice as sensitive to penicillin X and most of the staphylococci were equally sensitive to the two kinds of penicillin. Levels of penicillin activity in the serum against a strain of hemolytic streptococcus were significantly higher and sustained longer after intramuscular injections of penicillin X than after injections of the same number of units of regular penicillin.

These findings suggest that comparable therapeutic results may be expected with the use of smaller doses or with the same doses given at longer intervals when penicillin X is used. A preliminary clinical trial indicated that penicillin X is nontoxic and at least as effective as regular penicillin in the same doses in cases of pneumonia and probably more effective in gonococcic infections. Further clinical trials with the use of smaller doses and longer intervals are necessary in order to establish the therapeutic superiority of penicillin X.

In vitro tests reported by R. L. Libby and N. L. Holmberg in *Science* (102:303, 1945) also provide evidence that penicillin X is more effective than penicillin G against a number of different organisms.

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New Vitamin A

A compound having vitamin A activity, but differing in its properties, has been isolated from fish liver oils in a pure state by Robeson and Baxter (*Nature* 155:300, 1945). Crystallizing as pale yellow needles, with a melting point between 59° and 60° C. the new compound is an alcohol which forms a red anthraquinone carboxylate (m.p. 130°-131° C.). By treatment with alcoholic hydrochloric acid it forms the same anhydro compound as vitamin A, the reaction proceeding more slowly. The new vitamin is not so readily oxidized as vitamin A. Evidence so far suggests that the new compound is a geometric isomer of vitamin A, differing in the cis-transconfiguration at the double bond nearest the hydroxyl group. A method of its estimation has been worked out, and a new system of nomenclature based upon the genus of the fish from which it is derived is suggested.

Hair Removal

On the basis of fifteen years' experience with various methods of epilation or hair removal, especially electrolysis and electrocoagulation, M. L. Niedelman (Arch. Physical Ther. *26:290 1945*) *has come to the conclusion that the method of choice for epilation is electro-coagulation. Electrolysis and diathermy coagulation are quite different in their effect on the tissues. Electrolysis is a chemical action, whereas diathermy coagulation acts by generating heat, which can be controlled.*

At the present time there is no known drug that will cure hypertrichosis. The only method available for permanent removal of hair is therefore the destruction of the papilla and papillary vessels. Widely advertised depilatories only dissolve the hair shafts, never penetrating deeply enough to destroy the hair-producing papillae, and for this reason afford only temporary improvement. Nevertheless women make extensive use of these preparations, not only because of the simplicity of their use but because to their knowledge no other method is available. Depilatories may prove very irritating to the skin. Removal of hair by epilation forceps is likewise only a temporary measure, as the hair rapidly regenerates.

For women who object to epilation by electrolysis or dissociation, Niedelman believes that the best procedure is to shave or cut the hair very close and bleach fine hairs and lanugo with hydrogen peroxide. Concentrated hydrogen peroxide with 5 drops of ammonia water added to the ounce may be used, or an ointment containing hydrogen peroxide (33%):

Hydrogen peroxide concentrated	3.0
Cholesterinated petrolatum	30.0

This ointment is applied at night and removed in the morning. It must not be used near the eyes, as it may then cause conjunctivitis. Should irritation occur, it is better to alternate with unguentum aquae rosae. Some women prefer to use pumice stone. However, this method too is irritating and must be followed by liberal application of a mild cold cream or vanishing cream. The constant irritation has a destructive effect on the hair papillae, and may eventually produce atrophy.

Regrowth of hair may be prevented by daily shaving or by rubbing the surface with pumice stone for 2 minutes twice daily.

Liquid Shampoos

Shampoos intended for cleansing the hair and scalp, says S. P. Jannaway in *The Perfumery and Essential Oil Record* (36:179, 1945), should be efficient but mild detergents, having no harmful or irritant effect. They should be readily soluble in water and easily rinsed out of the hair, even in hard-water districts. The question of soap *versus* soapless shampoos is still a controversial one; both types have inherent defects that need to be carefully offset when devising and perfecting a formula, and both types are nowadays to be found on the market in various forms. After shampooing, the scalp should be left fresh and clean, and the hair soft, lustrous and free from any tendency to exhibit matting, stickiness, brittleness or coarseness.

In preparing liquid shampoos, not only must the raw materials be considered but also such factors as soap content, perfume content, rancidity, clarity and alkalinity. For the cosmetic chemist unskilled in soapmaking, Jannaway recommends the use of ready-made coconut soft soap. Together with a little prepared olive oil soft soap, this given an excellent shampoo when dissolved in water or a water-alcohol mixture. Other potential additives include small amounts of technical sodium hexametaphosphate (for hard water areas), potassium carbonate, borax, glycerine, etc. A liquid shampoo of this type might be made along the lines of the following typical basic formula; all parts being by weight:

Coconut potash soap (shampoo grade)	35.0
Olive oil soft soap	10.0
Glycerine	5.0
Alcohol	10.0
Perfume compound	0.2
Distilled water	40.0

The soap is dissolved in half the given quantity of hot water, the rest of the water being added cold. The glycerine and alcohol (incorporating the perfume) are then stirred in. The resultant liquid soap is stored for 2-3 weeks, then the clear liquid is drawn off from any sediment and filtered bright through diatomaceous earth.

Where the base shampoo soap is to be prepared from fats and alkalis, a formula such as the following may be used:

Coconut oil	14.0
Olive oil	3.0
Castor oil	3.0
Caustic potash (stick)	4.7
Glycerine	2.0
Industrial methylated spirit	4.0
Sodium hexametaphosphate tech.	1.0
Perfume compound	0.4
Water, distilled or softened	68.0

The potash is dissolved in 9 parts of the softened water and allowed to stand for a few hours. The clear lye is then run slowly into a steam-jacketed pan containing the previously melted oils. The

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lye must be added carefully, the rate of addition being controlled to prevent excessive effervescence. Control tests for incomplete saponification or excess alkalinity should now be carried out and suitable adjustments made.

After sampling and correction, the remaining portion of the charge is added, in similar fashion to the addition of lye, i.e., slowly and gradually. If large quantities of water are added, lumps will form and float about in the thin soap solution. These lumps will only disappear after prolonged boiling and stirring. If possible, the speed of the stirring gear should be gradually reduced as the soap gets thinner, until at the finish the blades are revolving at about 20 r.p.m. The finished soap is allowed to cool in the pan, when it should be drawn off and stored in vats. The longer it is kept the clearer it becomes, even if filtration is resorted to, and a clear product obtained. When the soap is new, a creamy deposit always results, and will make its appearance when the product has been bottled for a day or two.

Using the procedure outlined above, another typical liquid shampoo may be made from:

Coconut oil	18.0
Castor oil	4.0
Caustic potash (stick)	5.3
Borax	0.5
Glycerine	4.0
Perfume compound	0.3
Water, softened	68.0

Dimethyl Phthalate as an Insect Repellent

The value of dimethyl phthalate as an insect repellent has been reviewed editorially in the British Medical Journal *(1:704, 1945). Dimethyl phthalate can be applied to the skin without harm, though it may cause smarting on a few sensitive areas (such as eyelids, lips, or scrotum), which should be avoided. This treatment is easily carried out by anyone and will prevent the bites of mosquitoes for three to five hours. When 50 to 100 cc. was sprayed on to a suit of clothing, protection from* Aedes taeniorhynchus *was obtained for about a week. Similar results were obtained with* Aedes aegypti *and* Anopheles quadrimaculatus *in laboratory tests. Since mosquitoes readily bite through clothing, this method is a valuable adjunct to skin application. Dimethyl phthalate has been successfully used in the field as a repellent for* Phlebotomus papatasi, *the vector of sandfly fever. No satisfactory method of controlling the disease or controlling the vector has yet been devised. The usual procedures, such as screening, are ineffective because of the small size of the fly. In an experiment carried out in the Eastern Mediterranean area the daily use of dimethyl phthalate by troops reduced the complaints of bites and the incidence of the disease. For protection against fleas dimethyl phthalate also shows promise. Laboratory tests of forty-six possible repellents were made by exposing a treated human arm to a large number (500-1000) of dog and cat fleas. Dimethyl phthalate was high on the list of efficiency and was devoid of certain objections, such as toxicity to man and high cost. Clothing treated with it will give protection from flea attacks for several days. As well as repelling biting insects, dimethyl phthalate will prevent the attacks of the mites* Acariscus *and* Eutrombicula. *The larvae of these mites are called "chiggers" in the U.S.A., and their attacks are similar to those of the harvest mite, to which they are related. The repellent is applied to all the openings of the clothing and is said to give good protection for thirty days after treatment.*

A colorless and practically odorless oily liquid, boiling at about 280° C., a point which should be remembered in handling or using the substance is that it softens and dissolves plastics, some of which are in common use; therefore it should not be allowed to contaminate certain buttons, plastic jewelery, or fountain pens, and possibly some kinds of artificial silk may be attacked.

Stabilizing Carotene with NDGA

In their report on the stabilization of carotene with nordihydroguaiaretic acid (NDGA), E. Bickoff, K. T. Williams and M. Sparks (*Oil & Soap* 22: 128, 1945) point out that edible oils fortified with carotene can be of value in supplementing the present restricted supply of vitamin A. However, such fortification necessitates attention to stabilization since carotene may be lost readily by oxidation. Although added antioxidants have long successfully been used to protect carotene in inert organic solvents, their value in edible oil solutions of carotene has not been well established.

The work of these investigators has demonstrated the practicability of stabilizing carotene in animal and vegetable oils with antioxidant and thus reducing the loss in storage of the provitamin. Carotene was very stable in cacao butter and its incorporation in concentrated rations such as chocolate bars made with cacao butter might afford a satisfactory way of supplying provitamin A to the diet. Other methods that readily suggest themselves include its addition to cheese, butter, margarine, peanut butter, other spreads, and salad dressings.

Relative values for the carotene-stabilizing effects in edible oil solutions of a number of antioxidants, alone and in various combinations, have been determined. One of the more promising for this purpose is NDGA. When this antioxidant is used together with phospho-lipid or citric acid, its effectiveness is enhanced. Addition of alpha-tocopherol to oils containing only traces of this antioxidant causes a significant increase in carotene stability, and its sparing effect on carotene *in vivo* would further add to the desirability of its use in such oil solutions of carotene.

Insect Bite Lotion

Writing in the Bulletin of the U. S. Army Medical Department *(70: No. 87, 1945), Clark reports that insect and mite bites were among the three most common skin conditions encountered in an Army Hospital in the Pacific area. To relieve such bites, the following lotion proved very useful:*

	Gm. or cc.
Zinc oxide	25.0
Talc	25.0
Bentonite or kaolin	5.0
Camphor	5.0
Menthol	0.5
Water	30.0
Alcohol (95 per cent)	30.0

Tropical Face Powders

In discussing the formulation of face powders for use in tropical and subtropical countries, H. Janowitz (*S.P.C.* 18:536, 1945) disagrees with those who object to the use of starch on the grounds that it swells and clogs the pores. Simple iodine tests observed that nearly all the popular brands of face powder sold in one particular area contained starch as an ingredient. He found that when a face powder has been well mixed and sifted, with the addition of a quantity of calcium or magnesium stearate, the swelling of starch is virtually nil. In his opinion, a face powder specially suitable for use in a tropical climate, may be made along the following lines:

Starch	300-400
Talc	300
Kaolin	0-100
Zinc oxide	200
Magnesium stearate	50
Zinc stearate	50

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American Druggist

THE BUSINESS MAGAZINE OF EDITORIAL VITALITY

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Scientific News—When It Is News!

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Chain Store Man Tells the Independent

At the request of the editors, a chain drug store manager discusses the strength and weakness of the independent drug store. He tells the small independent why he can be better than the chain and why he does not have to be afraid of chain competition — if he works hard.

Small Business and "Business as Usual"

The former chairman of the Smaller War Plants Corporation, General Robert W. Johnson, reviews national affairs and comments that the small businessman must be alert to his nation's problems if he is going to operate a successful, profitable store.

What's What In Washington

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Perfumer's Shelf

Bohrisch Camphor Reaction

L. Pavolini (*Riv. ital. essenze, profumi piante offic.* 25:153, 1943, through *Chem. Abstr.* 39:4192, 1945) reports that in the Bohrisch reaction, when 0.05 to 0.1 Gm. of camphor is heated with 1 cc. of vanillin-hydrochloride, the mixture at first becomes rose to red in color. Upon further heating to from 75° to 100° C. it becomes turquoise green. This reaction, however, is obtained only with true natural camphor; with synthetic camphor the mixture remains colorless. The reaction is shown to be due to the borneol content of the camphor and thus is not specific for camphor.

Rose Oil Production in Texas

Prior to the outbreak of World War II, approximately 80 per cent of the rose oil imported into the United States came from Bulgaria and Southern France, with other European countries contributing the remaining 20 per cent. When imports virtually ceased, the question arose as to whether rose oil would be produced in this country. Part of the answer is given in bulletin No. 84 of the A. & M. College of Texas: "A study of Rose Oil Production in Texas," by J. H. Sorrels and J. C. Ratsek.

Here it is pointed out that in Northeast Texas approximately 3,000 acres of roses are grown each year for sale as bushes. Of the more than 200 varieties grown, 95 per cent are known as hybrid tea roses or more commonly as garden roses. They vary considerably in the quantity of oil they contain as evidenced by the wide difference in fragrance between varieties. Although the question has been raised several times as to whether these East Texas garden roses could be used for oil production, no satisfactory answer has been obtained. There is very little evidence in literature that garden rose varieties have been used for oil. Investigations were therefore undertaken to study the possibilities of producing rose oil from these garden variety roses grown in Texas. Because an experiment plot of Cabbage roses was available for study, equipment was set up so that the products obtained from the Cabbage rose could be used as a basis of comparison with European products from the same species of rose and with the products obtained from certain varieties of garden roses.

After considerable work, it was shown that attar of roses can be obtained from Texas garden variety roses. However, the attar from garden roses is nonstandard and the yield from such roses is considerably less than that obtained from the Cabbage rose. It was found that the use of field run, or mixed colored roses produces an absolute that is satisfactory. The quantity or quality of rose absolute from the garden roses does not seem to be affected by color.

Studies of standard production methods indicate that the enfleurage method is not adaptable to the production of otto of roses. Packing of roses in the distilling process definitely decreases the yield. Circulation of solvent during the extraction process decidedly increases the yield of absolute.

Reagent for Identifying Essential Oils

Essential oils are usually identified by their odor, physical constants (specific gravity, boiling range, refractive index, optical rotation, etc.), and a determination of some characteristic chemical constituent. However, it frequently happens in analytical work that the quantity and purity of the oil recovered does not allow of conclusive identification following the application of the above tests under such circumstances, reports E. Huckwall (*Quart. J. Pharm. & Pharmacol.* 18:84, 1945) the 2:4-dinitrophenylhydrazone derivatives provide a useful means for the identification of the aldehydic and ketonic constituents of essential oils, and since these derivatives may be prepared from relatively small quantities of oil they furnish valuable analytical data.

The procedure employed is essentially as follows: Separate the oil from the preparation under examination by steam distillation or alternatively by co-distillation with ethylene glycol under reduced pressure. Dissolve 0.05 to 0.5 mil of the oil in about five times the volume of ethyl alcohol and add the solution, drop by drop, to 2 to 5 mils of a saturated solution of 2:4-dinitrophenylhydrazine in 2N hydrochloric acid at 0° C., shaking vigorously after each addition. With many of the oils the derivative separates within a few minutes, but in other instances (citronella, lemon rue,) it is necessary to allow the mixture to stand for several hours at 0° C. Separate the precipitated dinitrophenylhydrazone by centrifuging or filtering through a small Hirsch funnel, wash with 2N hydrochloric acid and then with distilled water until free from chloride. Recrystallize from the appropriate solvent and note color (in bulk), crystalline habit, and melting-point. When a standard technique is adopted, the crystalline form of the dinitrophenylhydrazone is characteristic for the oils examined, and in certain instances it is possible to dispense with the melting-point determination, providing control derivatives are prepared from the carbonyl compounds being identified.

The table below gives the oils with which the reagent has been found satisfactory for the identification of the carbonyl compound characteristic of the oil. In the case of oil of peppermint the carbonyl compound identified is menthone, whereas the alcohol,-menthol, is to be regarded as the characteristic constituent. However, since it is often necessary, in analysis, to distinguish this oil from the other mint oils, it has been included in the table.

Oil	Characteristic constituent	2:4-Dinitrophenylhydrazone		
		Color	Crystallising solvent	m.pt. °C.
1. Bitter almond	Benzaldehyde	Orange	Acetic acid	237
2. Caraway	*d*-Carvone	Red	" "	190
3. Cassia	Cinnamic aldehyde	"	" "	255
4. Cinnamon	Cinnamic aldehyde	"	" "	255
5. Citronella	*d*-Citronellal	Orange	Ethyl Alcohol	77
6. Cummin	Cuminic aldehyde	Red	Acetic Acid	243
7. Dill	*d*-Carvone	"	" "	190
8. Lemon	Citral	"	" "	110
9. Lemongrass	"	"	" "	110
10. Pennyroyal	Pulegone	"	Ethyl alcohol	147
11. Peppermint	Menthone	Orange	" "	146
12. Rue	Methylnonylketone	Yellow	" "	63
13. Spearmint	*l*-Carvone	Red	Acetic acid	193

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FUMERS who have shunned the aid of outside ence—who have preferred, in the past, to go-it- n the solution of their problems—may find that ffort is now an outmoded method of approach. sson of "harnessed atomic power", brought to ic reality solely and deliberately through the d and coordinated efforts of *many* trained minds, t be ignored or forgotten in the months and o come. Instead, individuals and organizations reliance has been upon one-man effort hereto- ay now be faced with the inescapable competi- t that *two heads ARE better than one!*

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VDERS PREFERRED . . . .

OYING a demand far in excess of anything sly experienced, the manufacture and sale of s is still soaring. Easy to make and easy to e one great problem with dusting and talcum s is to obtain an odor that will *last* . . . particu- paper containers. The four, moderately priced, ting perfumes featured on the following page ecially developed to overcome this difficulty. ind them ideal for this type of work.

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Raw Materials from Jugoslavia

Speaking as a chemist familiar with the country, J. G. F. Druce (*Manuf. Chem. & Manuf. Perf.* 16:257, 1945), discusses the prospect of obtaining raw materials from Jugoslavia, some of which are of importance in perfume and allied industries. Jugoslavia, he notes, has an extensive Adriatic littoral with a number of large islands. It is here that economic plants are cultivated for their oils. These include lavender, rosemary, helichrysum, noble laurel, olive, prunus and pyrethrum. Some inland districts specialize in crops of sage, peppermint, soya, poppy and juniper, while the south, especially Bosnia, is well wooded with pine and hard woods which serve the wood distillation industry.

Rosemary (*Rosmarinus officinalis*) is especially cultivated on the islands of Hvar and Vis, though it is to be seen almost everywhere along the coast. The crop is cut in early summer every three years and is generally distilled locally by the growers, for if the twigs become dry the yield is lowered. Most of the stills are crude affairs, but efficient steam-distilling appliances were being introduced before the war. These give a much higher yield and a better product. The total oil (which contains mainly pinene and camphene, cineol and borneol) available for export used to be about 100 tons annually. It has the disadvantage that exposure to air causes the oil to resinify. Also it is often adulterated with turpentine. Several species of Immortelle, or everlasting (*Helichrysum Staechas, H. saxatile* and *H. augustifolium*), are cultivated for their wooly leaves and yellow capitula ("heads"), which give some 0.2% of a yellow oil rich in nerol. The noble laurel yields an extract of local interest, since it is used to discourage mosquitoes.

Essential Oils as Spray Activators

A concise review of scientific research done in Australia, appearing in the *Manufacturing Chemist and Manufacturing Perfumer* (16:246, 1945), includes a summary of work done on essential oils as insect spray activators. Of several Australian essential oils tested for use as activators for increasing the effectiveness of the pyrethrins in fly sprays, the following were the most suitable: *Backousia myrtifolia, Zieria smithii, Melaleuca bracteata* and Huon pine (*Dacrydium franklinii*). Oil of *Backhousia* was much more efficient than sesame oil, used on a large scale as a pyrethrin activator in America and India for the same purpose. None of the activators for pyrethrum found to be successful against flies was effective against mosquitoes. Fly sprays containing 0.03% DDT, which are highly toxic to house-flies, but have a slow knockdown effect, are improved by the addition of pyrethrin.

Oleoresin of Copaiba

Useful in several industries and in the medical field, oleoresin of copaiba is also used as a fixative in scenting soaps and in perfumes. Writing in the August 1945 issue of *Agriculture in the Americas*, M. S. Coiner states that oleoresin of copaiba is obtained from trees of the genus *Copaifera*, family Leguminosae, which are indigenous to northern South America. Several botanical species of the trees which produce balsam of copaiba are found in different parts of the continent. The resin is known, not by the species which has produced it, but by the port from which it is shipped. The greater part of Brazil's copaiba comes from *Copaifera reticulata* and is known in trade as Para copaiba. Maracaibo copaiba, a variety distinguished by greater viscosity and darker color than Para copaiba, comes from *C. officinalis*, which is a native of Venezuela, and from *C. guianensis*. These species are found also in Colombia and the Islands of Trinidad and Martinique. *C. multijuga*, the *Copahiba Angelim* of the States of Para and Mato Grosso, is the source of the greater part of the commercial balsam exported from Manaos.

Native woodsmen, often financed by exporters, travel into the jungles to tap the trees. Copaiba as it flows from the tree is clear, pale in color, and very thin, but upon exposure it becomes thicker and acquires a definitely yellow tinge. It has a slightly greenish fluorescence, a peculiar aromatic odor, and a persistent bitter taste. It is partly soluble in alcohol and almost completely soluble in dehydrated alcohol, carbon disulfide, chloroform, and ether, but is insoluble in water.

After the balsam reaches foreign markets, the oil is distilled. It is a liquid, transparent, and somewhat opalescent resin-oil. It is sometimes colorless but may vary in color from pale yellow to golden brown. Commercially, balsams from Para and from Maracaibo are the most important, the former being preferred for the distillation of oil, since it yields up to 85 per cent. The latter has thicker consistency and yields from 35 to 58 per cent of oil.

Volatile Oil from "Anise Hyssop"

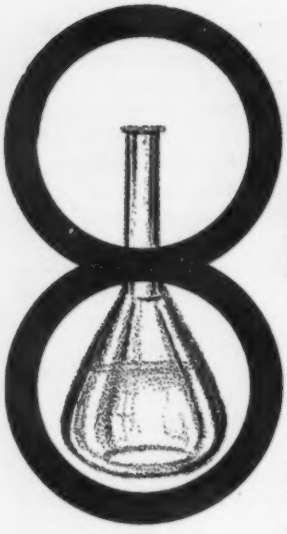
An investigation was undertaken by E. H. Polak and R. M. Hixon (*J.A.Ph.A.*, Scientif. Ed. 34:240, 1945) with the purpose of expanding the limited information available on the volatile oil of *Lophanthus anisatus* Benth. or "anise hyssop." Variations in oils obtained from plants grown and processed under different conditions were studied. The presence of the following oil constituents was demonstrated: Methylchavicol (main constituent), *d*-limonene, probably α-pinene, and a mono- or bicyclic sesquiterpene. Upon standing the oil formed various methylchavicol polymers from which could be isolated two dimers, isoanethole and probably "non-sublimable" metanethole, and two unidentified ethers. It is suggested that the dimers of methylchavicol might be of interest in the study of synthetic estrogenic compounds.

Separating Essential Oils

According to Y. R. Naves (*Helv. Chim. Acta* 27:1103, 1944) the analytical separation of essential oil from aqueous distillates of vegetable extracts containing water-soluble constituents, like benzyl alcohol, phenethyl alcohol, etc., should be carried out after salting the distillate, under definite conditions. Extraction with a pentane-ether mixture instead of pentane is recommended in the case of products containing benzyl alcohol. In his opinion, the technic of codistillation of essential oils with glycol requires revision.

Essential Oil Sources in Ohio

In discussing post-war chemurgy in Ohio, K. M. Snyder (*Chemurgic Digest* 4:259, 1945) remarks that the subject of essential oils has received considerable attention during the recent years, and test plantings indicate that many of these plants, from which essential oils are secured for use in the manufacture of medicines and good products, offer further possibilities. Coriander has been found to be a successful crop in southwestern Ohio. Fennel, caraway, sassafras, peppermint, pennyroyal and a number of other essential oil plants also can be cultivated successfully within the State. In some cases there is a limited production on a commercial scale. There are, however, certain cultivation and harvesting problems which still are in the process of solution. Every indication suggests that adequate equipment will be developed, enabling the growing of these crops on a competitive basis.



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Industry's Books

Studies In Biophysics: The Critical Temperature of Serum, by Lecomte Du Nouy, D.Sc., Director of the Laboratory of Molecular Serology, University of Paris, 185 pp., Reinhold Publishing Corp., New York., $3.50.

The experimental researches condensed in this book by no means cover the whole subject. However, they constitute a systematic effort to pave the way so that it will eventually be possible to tackle the still mysterious problems of immunity by means of physicochemical and physical methods. The writer has attempted to interpret some of the new facts brought to light by means of a hypothesis concerning the structure and the behavior of the complex lipido-proteinic "molecule" of serum. Contents: 1—Absorption; Monomolecular Layers; Summary of Previous Experiments. 3—The Viscosity of Serum As a Function of Temperature. 4—Rotatory Power and Rotatory Dispersion of Serum As a Function of Temperature. 5—Optical Density (Absorption) and Scattered Light as A Function of Temperature. 6—Factor of Depolarization; Mechanism of Coagulation by Heat. 7—Ionic Equilibria of Serum as a Function of Temperature I. Sedimentation. 8—Ionic Equilibria of Serum as a Function of Temperature II. Electric Conductivity. 9—Ionic Equilibria of Serum as a Function of Temperature III. Concentration of Hydrogen Ions. 10—Fixation of Ether by Serum as a Function of Temperature; Parallelism with the Complementary Power. 11—Interfacial Tension as a Function of Temperature. 12—The Ultraviolet Absorption of Serum as a Function of Temperature.

Disinfection And Sterilization, by Ernest C. McCulloch, M.A., D.V.M., Ph.D., Professor of Bacteriology in the Health Research Institute, 472 pp., Second Ed., Illus., Lea & Febiger, Phila., $6.50.

Since the first edition of this work appeared, there have been many outstanding contributions to our knowledge of this subject. Data on the sulfonamides and their application, an increased realization of the possibilities of microorganisms in combating infection and an improved technic in sterilization, all have enlarged our knowledge in this field and increased the usefulness of this work. This work will be particularly useful to anyone interested in the natural laws governing the growth and death of microorganisms as well as the practical problems of disinfection and sterilization. It covers the latest information on germicidal values of disinfectants and their action on the different species of microorganisms. Such subjects as pasteurization, water purification and the effective use of many miscellaneous disinfectants are fully covered, while a comprehensive list of references indicates the available literature on the subject.

Your Hair and Its Care, by Oscar L. Levin, M.D., and Howard T. Behrman, M.D., 183 pp., Emerson Books, Inc., New York, $2.

Two medical specialists have here pooled their knowledge to give in plain language the up-to-date scientific facts now available about hair. They tell what to do to save and beautify hair, stimulate healthier hair growth, and deal with many other hair problems, common and uncommon.

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COLLOIDAL SULFUR BATHS: Please give us a formula for making liquid colloidal sulfur baths. We would appreciate any information you can give us. Chicago.

A colloidal sulfur bath can be made along the following lines:

Colloidal sulfur	**28**
Glycerine	**8**
Alcohol	**50**
Turpentine	**10**
Pine Needle Perfume	**4**

DANDRUFF ERADICATOR: We are anxious to obtain a formula for a dandruff eradicator for both dry and oily scalp. Anything that you can supply will be greatly appreciated. Detroit.

Treatment of dry and oily scalp is quite different and one preparation would hardly serve for both types. The dermatologist, N. Tobias suggests the use of two formulas to meet these varying conditions:

For oily seborrhea he recommends the following lotion:

Resorcin monoacetate	**4.0-8.0 parts**
Mercury bichloride	**0.2 parts**
Salicylic acid	**4.0-8.0 parts**
Glycerine	**8.0 parts**
Alcohol (90%), to make	**24.0 parts**

When dry seborrhea is present, he advocates the following:

Resorcin monostearate	**4.0-8.0 parts**
Mercury bichloride	**0.2 parts**
Salicylic acid	**4.0-8.0 parts**
Castor oil	**8.0 parts**
Alcohol (70%) to make	**240.0 parts**

MOSQUITO REPELLENTS: As subscribers to your very excellent publication, we are writing to ask if you can suggest a modern formula to be used as a mosquito repellent. Toronto.

Modern formulas for mosquito repellents have been published at frequent intervals in our magazine. The Army insect repellent which has received considerable attention, and which is considered to be very effective, is as follows:

Hydrogenated castor oil	**25**	**Grams**
2-ethylhexanediol-1,3	**30**	**Grams**
Color mixture	**38**	**Grams**
Plenyl mercuric benzoate	**0.004**	**Grams**
Beeswax, yellow	**4**	**Grams**
Lanolin, anhydrous	**3**	**Grams**

In addition, I would suggest that you check our item on a new insect repellent published on page 473 of the October 1944 issue of Drug & Cosmetic Industry.

PRODUCTION PROBLEM: Being a manufacturer of a deodorant liquid and also a deodorant and perspiration preventing cream, I am particularly interested in your advice and information on my problem.

The cream preparation is a 15% aluminum chloride in a glycerine and agar jelly. There seems to be no certainty of turning out their product uniformly—some batches having to be discarded. In the successful batches, a separation of a clear liquid sometimes occurs a few days after making. The uncertainty of producing this satisfactorily is disconcerting, but when achieved gives a product which does not shrink as do the vanishing cream bases. My method of manufacture is to soak the agar in water overnight, pour off surplus unabsorbed water, add the glycerine and heat to boiling point to produce a thick jelly. Melbourne.

From what I gather, your chief trouble lies in the agar used as the jelling agent. As you are probably aware, your main difficulty is most likely the variation in the grades of agar employed. In view of your many experiments with possible replacements for agar all I can suggest is that you try methyl cellulose, which is a uniform product, as your jelling agent.

STICK COLOGNE: We are interested in obtaining a formula for a stick cologne, not a stick perfume. Your cooperation in this matter would be greatly appreciated. Minneapolis.

As you are probably aware, we have at times published formulas for making solid or stick perfume. It seems to me that the base formula for making such products would remain unchanged for the making of a stick cologne except that lighter odors or scents would be used.

TEXTS ON EMULSION TECHNOLOGY: After reading many articles on cosmetic formulation and manufacture I have come to realize the importance of information concerning emulsions. I should like to know more about the subject and I would greatly appreciate a list of suitable books giving the background and practical application of emulsion technique. Santa Barbara.

"Colloid Chemistry: Theoretical and Applied", edited by Jerome Alexander (4 vols.)

"Emulsions and Foams" by S. Berkman and G. Egloff

"Emulsion Technology"—A symposium

"Practical Emulsions" by H. Bennett

"Theory of Emulsions and their Technical Treatment" by W. Clayton

"Technical Aspects of Emulsions"—A symposium

"Mechanochemistry and the Colloid Mill" by P. M. Travis

"Colloid Systems" by A. Von Bazagh

All of these books are available from our book department.

Of course, discussions of emulsification and emulsifiers appear frequently in our publication, as well as in other technical sources.

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FENNEL SEED, Indian
FOENUGREEK SEED
GENTIAN ROOT
GINGER, Jamaica, Calicut
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IRISH MOSS
JUNIPER BERRIES
KAMALA POWDER
LAUREL LEAVES
LAVENDER FLOWERS
LINDEN FLOWERS, with Leaves
MAHUANG, Chinese
MARJORAM LEAVES
NUX VOMICA
OAK MOSS
ORANGE OIL, Sweet
ORRIS ROOT
PEPPERMINT OIL
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Streptomycin

(*Continued from page 630*)

erate dosage was tolerated without untoward effects. Streptomycin is very rapidly absorbed after subcutaneous and intramuscular administration, the maximum concentration in the blood occurring within 15 to 30 minutes. The concentration decreases in the next five to six hours to below accurately measurable levels. The absorption of streptomycin from the gastro-intestinal tract is uncertain and probably very slight, causing no significant concentration in the blood and only about 10 per cent excretion in the urine.

Streptomycin is capable of producing certain reactions of varying severity, though mostly transient. It is thought that these reactions, which may occur when very large doses in high concentrations are given rapidly intravenously or intramuscularly, are due to an accompanying impurity and not intrinsically to streptomycin. The signs and symptoms resemble those following histamine intoxication, and therefore have been attributed to the presence of a blood pressure lowering factor in impure streptomycin preparations.

Preparations of streptomycin have been obtained that have assayed as high as 800 micrograms of streptomycin base per milligram of material. Streptomycin is very soluble in water, and material assaying for as much as 1 gram of streptomycin base may be readily dissolved in small amounts (10 to 20 cc.) of sterile, pyrogen-free, distilled water or physiologic saline solution for parenteral use. Although reasonably stable in solution, it is recommended that only freshly prepared solutions of streptomycin should be used parenterally, and that streptomycin, both in the dry form and in solution, be stored at temperatures not exceeding 25° C. Clinically, continuous intramuscular drip and intermittent intramuscular or subcutaneous injections are the preferred methods of administration. Although studies in animals have shown that streptomycin is excreted as rapidly as penicillin, in clinical practice significant concentrations have been detected in the blood for as long as four hours after a single intravenous or intramuscular dose. For topical applications, streptomycin should be diluted to concentrations of 250-500 micrograms per cc. of solution.

The probable utility of streptomycin in extending the effective chemotherapeutic coverage of the wide range of diseases caused by bacteria, particularly in the direction of those of the gram-negative group, as indicated by *in vitro* studies of the bacteriostatic spectrum of streptomycin, became even more promising as a result of studies of the control of various infections in laboratory animals. Waksman and his co-workers had found that streptothricin was active against certain gram-positive bacteria as well as against a variety of typical rod-shaped gram-negative bacteria. Extensive investigations by workers in The Merck Institute for Therapeutic Research proved this to be true not only in the test tube but in the experimental animal. Its action on *B. mycoides* and the gram-negative *Ps. fluorescens*, *Ps. aeruginosa*, *Proteus vulgaris*, and *Serratia marcescens* was rather limited. Streptomycin, on the other hand, gave complete protection to the mouse against infection by *Salmonella schottmulleri* and *Ps. aeruginosa*, an organism highly resistant to the antagonistic action of antibiotics, since it produces two antibacterial agents of its own. By the use of chick embryos, it was shown that streptomycin offers full protection against fowl typhoid caused by *Shigella gallinarum*, and against *Brucella abortus*. Complete protection in experimental animals also was obtained against *Proteus vulgaris*.

Tularemia is widespread in the United States, and the 1,600 reported annual cases are characterized by high morbidity and a mortality of three to five per cent. Against the causative agent, *Pasteurella tularensis*, Heilman, of the Mayo Clinic, has recently shown that streptomycin is three times more effective than it is against *E. coli*, and that infections in mice can be completely prevented by this new antibiotic. The mouse is extremely susceptible to infection with virulent strains of *P. tularensis*, and Heilman comments, "The protective action on experimental tularemia in this animal suggests that the drug may be useful in the treatment of such infections in man."

Heilman also showed that streptomycin exerted a marked protective effect on mice infected by intra-abdominal injection of three different strains of organisms of the Friedländer group (*Klebsiella*) when administered for periods of two to three days. When mice were injected by the intranasal route with a Type A strain of *Klebsiella pneumoniae*, the duration of the life of the animals was prolonged by treatment with streptomycin for three days. Extension of the treatment of another group of fifteen infected animals to seven days, resulted in the survival of thirteen. It is suggested that streptomycin may be useful in the treatment of various infections caused by organisms of the Friedländer group in man.

Heilman also considered it to be of interest to determine whether streptomycin would have an effect when used in the treatment of the spirochetal infections, *e.g.*, relapsing fever and leptospirosis icterohemorrhagica (Weil's disease), as produced in experimental animals, since penicillin has been reported to exhibit a therapeutic effect on these infections. Experiments with mice infected with *Borrelia novyi*, the causative agent of relapsing fever, and with hamsters infected with *Leptospira icterohemorrhagiae*, showed that streptomycin exerted a considerable protective effect. It is suggested from these experiments that streptomycin may be useful as an adjunct to penicillin therapy in the treatment of spirochetal infections in man.

Waksman had shown that streptomycin has bacteriostatic and bactericidal activity against a human strain of *M. tuberculosis* in the test tube and, at his suggestion, Feldman, Hinshaw, and Heilman of the Mayo Clinic studied the possible effectiveness of streptomycin on experimental tuberculosis in guinea pigs. From their

(*Continued on page 726*)

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TABLETS

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PURCHASING DEPARTMENT

Industrial Ethyl Alcohol Advances 2 Cents per Gallon; Tight Supply Position Likely to Continue in Glycerin

Medicinal chemicals produced in 1944 dropped from 56,000,000 pounds to 42,000,000 pounds, according to the United States Tariff Commission. Sales decreased from 52,000,000 pounds to 40,000,000 pounds. Production of cyclic medicinals decreased by 26 per cent, compared with 1943, partly owing to a decrease of 5,500,000 pounds in the output of sulfa drugs. Production of acyclic medicinals decreased by one per cent. A drop of 18 per cent in the quantity of sales of acyclic medicinals was partly offset by an increase in the average unit value of sales per pound to $4.82, in 1944, compared with $4.13 in 1943. The value of sales of all bulk vitamins dropped from $61,000,000 in 1943 to $47,000,000 in 1944, partly owing to lower prices.

Alcohol Prices Increased

According to amendment No. 13 to Maximum Price Regulation No. 28, having to do with ethyl alcohol produced east of the Rocky Mountains, manufacturers' price ceilings were increased 2c per gallon on industrial ethyl alcohol made from molasses.

The Office of Price Administration declared that the increase, which was effective October 19th, lifts the base ceiling to 50c per gallon and the action was taken to enable the Reconstruction Finance Corporation to reduce to minor proportions a trading loss it has been experiencing on sales of imported molasses for alcohol manufacturers. RFC has been the exclusive source of such molasses supplies.

The increase in ceiling prices will be largely absorbed by the manufacturers of solvents, industrial chemicals, pharmaceuticals, drugs, cosmetics and other items whose ceilings were not changed by the amendment indicated above. The new ceilings will apply also to resales by manufacturers east of the Rockies of any industrial ethyl alcohol bought from the Office of Defense Supplies.

OPA exempted from price control all industrial ethyl alcohol and high wines made in the United States from grain after September 30, when sold by the manufacturers to the RFC. Previously, such sales had ceilings determined by a cost-plus formula. The drop in these alcohol requirements from wartime levels has made the formula no longer required. This exemption applies to sales to RFC and does not apply to sales to civilian buyers.

While the Government's stockpile of alcohol which is reported at 80,000,000 gallons, and the limited output of industrial materials possible under Government raw material controls, will, in the opinion of some trade factors, be sufficient to meet industrial requirements until new molasses supplies from Cuba are available, it is generally feared that an acute shortage of high grade material will develop before the end of the year. The term high grade alcohol, is used to describe those formulae suitable for the manufacture of toiletries and pharmaceuticals.

Glycerin Tight

Until an improvement in glycerin production is noted, or it is possible to import more crude material from South America, an usuaually tight supply position is likely to be witnessed, it was pointed out here yesterday. Some smaller refiners have advanced prices on all grades of refined to the ceiling which follows: 18c per pound in tank-cars; 18¼c per pound in carload lots, drums, and 18¾c per pound in less than carlots. Although major producers have not yet followed the question of price appears to be a secondary issue since the heavy demands from virtually all consuming industries have left the market in an exceedingly tight position. Based on the current rate to demand some trade factors look for a continued shortage of material over the balance of this year.

Although a stock of 50,000,000 pounds of glycerin is regarded as a reasonably safe quantity to meet total requirements, official figures just released show that stocks of this widely used chemical declined 8,164,000 pounds to 51,340,000 pounds (absolute basis) during August. On July 31 stock on hand amounted to 59,504,000 pounds.

(*Continued on page 707*)

OCTOBER PRICE CHANGES

UP

Acetophenone 7c
Alcohol 2c
Anisic aldehyde 10c
Beladonna leaves 28c
Cedar wood oil 10c
Cinnamon bark oil $2
Eucalyptus oil 8c
Golden seal root 40c
Menthol natural 25c
Mercury $9
Papain 50c
Senega root 5c
Soap bark, crushed 2c
cut 2c
Spearmint oil 10c
Stramonium leaves 1c
Thyme oil red NF 40c
while 40c

DOWN

Acetophenatidin 5c
Almond oil Bitter 65c
Balsam Peru 15c
Bay oil 10c
Bergamot oil $1
Calamus oil $2.50
Canaga oil Native $2
rectified $1.50
Caraway oil $3
Cedar leaf oil 10c
Celery oil 25c
Citronella oil Ceylon 15c
Geranium oil Bourbon 25c
Ginger oil $4.50
Lemon grass oil 10c
Lime oil dist. 25c
Mustard oil Artificial 5c
Nutmeg oil $1.25
Peppermint oil Natural 60c
Redist. 60c
Petit grain oil SA 40c
Pimento Berry Oil $1.75
Pimento Leaf Oil 50c
Wintergreen oil 10c

• Prices quoted in this section were current on the first of this month.

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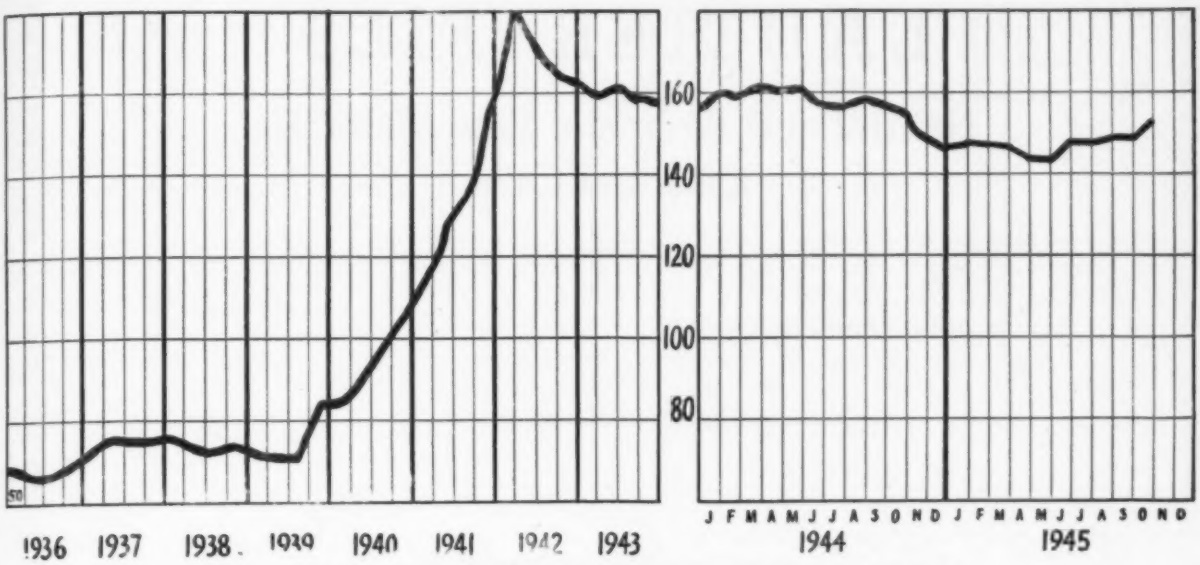
50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for October advanced from 151.5 to 156.9.

Suspension of Ceiling Prices on Vegetable Waxes Brings Out Higher Shipping Prices in Brazil

The OPA suspended revised MPR 264 and Amendment 64 to Supplementary Order 129, covering ceiling prices for imported carnauba, ouricury and candelilla waxes, as well as imported and domestic beeswax, either crude, refined, or bleached.

The suspension of ceiling prices on vegetable waxes brought out shipping prices on carnauba from Brazil at quotations from 15 to 20c a pound above what local importers had been allowed to pay under former price regulations. Reports indicate that 85c a pound was paid for No. 3 north country wax f.o.b. Brazil for January shipment, which will mean that these goods will have to sell at close to a dollar a pound by the time freight, and a small margin of profit, is taken into consideration.

Most everyone in the wax industry had more or less anticipated such a development, however, and because of the exceedingly high shipping prices quoted, many importers seem willing to mark time for the moment hoping that the excitement will soon pass. Some trade factors explain, however, that if the price ceiling had been suspended earlier in the year they would have been able to purchase goods at much lower prices than those now being quoted in Brazil. Rising prices in Brazil over the past several months have been supported by demands from liberated countries.

Ergot Cultivated

Ergot, a fungus drug widely used in obstetrical medicine, has been successfully propagated artificially under tropical conditions in the province of Bengal, India, J. C. Saha and S. K. Bhattacharjee of Presidency College state in a report sent to the English scientific journal, Nature, (Sept. 22). Present world supplies of this drug come principally from wild sources in Spain and Portugal. If the experiments in India can be followed up by successful commercial-scale production, India may eventually have ergot for export after supplying home needs.

Ergot is made from a parasitic fungus that invades the tissues of plants belonging to the grass family, forming long, dark masses of fruiting bodies in place of a part of the grains in the normal head. These fruiting masses, dissolved and purified, are the source of commercial ergot.

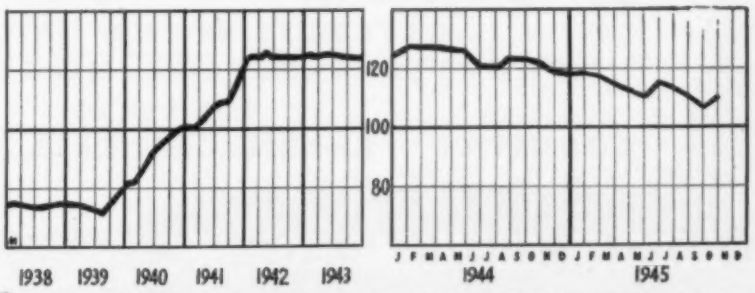
In the experimental propagation, four small plots of ground were planted in rye. When the grain was in flower, a suspension of ergot spores in sterile water was sprayed over them. Shortly thereafter signs of infection appeared on the plants, and in due time large grains of high-quality ergot were produced.

Ergot cultivation has been tried out on an experimental basis in England, Wales and Australia, but the present tests are believed to be the first to be attempted in tropical country.

Vanilla Firm

Spot supply of vanilla beans is small and about half of the remaining lots to come from Madagascar under the export quota established by the French Colo-

15 Medicinal Chemicals—Weighted Price Index. 1926=100.



The medicinal chemicals index advanced from 122.1 to 133.8. Alcohol rose 2 cents; menthol was higher at $4; mercury rose to $100 a flask. Cod liver oil was lower.

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nial Government are still on the dock. After these goods are unloaded only 125 tons remain to be exported to the United States under its quota.

Vanilla exports from Dominica, British West Indies, have increased during the war years, according to the foreign press. In 1939 the colony exported 9,428 pounds and in 1944 exports totaled 50,833 pounds.

Gums Firm

Trade in both tragacanth and arabic gums has turned more active with the improved demand being accompanied by an upward movement in prices. Spot prices on No. 1 ribbon tragacanth are unchanged, but No. 2 and No. 3 grades are higher. The upturn in activity is attributed to some uncertainty regarding exchange rates at the primary center which threaten to influence future costs. The advance of ¼c a pound in gum arabic establishes the spot market at 11¾c to 12¼c per pound as to quantity.

Papain Jumps

Prices for replacement goods have risen about 50c a pound at the point of origin and spot quotations were up to $3.50 to $3.75 per pound as sellers turned to reserve as the proper approach to the spot market at this time. Payment of higher cabled prices has yet to be announced

Miscellaneous

Shortage of labor and equipment in the British West Indies has resulted in a reduced production of arrowroot. All varieties of aloes remain extremely scarce on spot. The outlook in senega root is regarded as highly uncertain. Prices are up to from $1.80 to $1.85 per pound. Cables from the primary market indicate a very firm market for senna. Spot supplies of lobelia herb, dandelion root and angelica are very small. Inquiries for black psyllium seed revealed that spot stocks are at a very low level and that at least 55c to 65c a pound would have to be paid for prompt delivery.

GLYCERIN TIGHT

(*Continued from page 703*)

Production of crude material increased to over 3,000,000 pounds during August. If that trend continued, there would be little chance of any real shortage developing, but because of many readjustments in our present economy with labor difficulties, etc., it is extremely difficult to make predictions regarding future production.

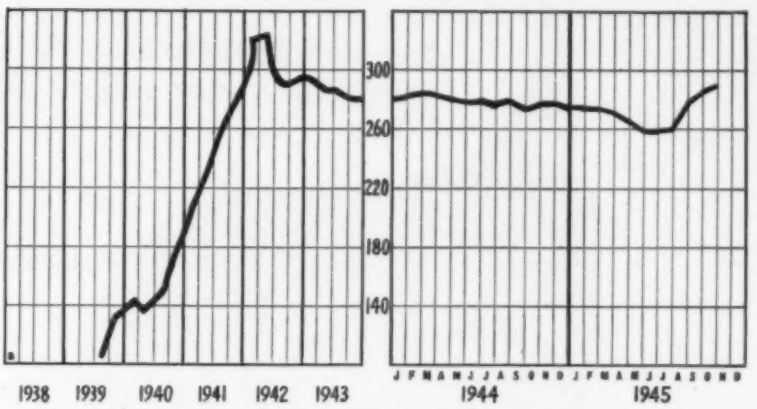
Demand for glycerin is reported as heavy with fears of a further tightening in the supply causing a number of buyers to purchase material for stock purposes. Some additional small arrivals have been noted, but as far as can be learned, there is nothing afloat from South America that would materially alter the over-all position.

Glycerin is a widely used chemical. Rocket powder demand has disappeared but explosives demand is reported continuing at a high rate and there are orders in the market to fill a long list of badly needed civilian goods. Buying on the part of the protective coatings industry has been particularly brisk recently.

Mercury Up

Because of a small supply available on spot, quotations on mercury were advanced to a range of from $100 to $105 a flask. It is understood that approximately 12,000 flasks held by a battery manufacturer as the result of a sudden ending of military demands has been offered for sale to the highest bidder but all bids will be subject to approval of the Signal Corps. The Pacific Coast market is said to be stronger than the situation here with latest advices quoting $105 a flask, f.o.b. San Francisco, equivalent to $110 spot. As far as could be learned little or no Spanish metal has arrived in recent weeks and most suppliers of Mexican metal are inclined to remain on the sidelines at the moment in hopes of a still higher market.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index advanced from 284.5 to 286.5. Belladonna rose sharply to $1 a pound.

Manufacturers of mercurials failed to announce expected price reductions.

Penicillin Production Down

Although no official production figures are available, it is understood that production of penicillin has fallen off and that the present over-all supply position is exceedingly tight. Source of any material from fermentation process is rather uncertain, it is explained, and reports indicate that at least two major producers have had rather unfavorable results of late. The shortage has also aggravated somewhat by mounting demands for various pharmaceutical forms. Foreign Economic Administration is reported to be appealing to distributors for material to take care of export demands and certain hospitals have encountered difficulty in obtaining goods.

Menthol Up

Eagerness to get more money for an article actually subject to price depressing influences has led to some attempt locally to get the market up to $4.50 per pound. However, at this writing goods were actually bought on spot at $4 to $4.25 per pound—which minimum price was also prevailing for racemic USP synthetic menthol on spot. Visiting factors from Brazil said that they hope eventually to secure a stable market there even though it might be stabilized at levels somewhat under those now prevailing. Cables received also reported a firmer tone in Brazil. One active factor at the source has withdrawn 10,000 pounds from the market, intending to stay aloof until price stabilization may permit him to secure better prices than are now in

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sight. There seems to be plenty of menthol in all markets.

Miscellaneous

Buyers are still experiencing difficulty in getting sufficient quantities of citric acid. Ample quantities of tartaric acid are obtainable for immediate delivery. Such items as hydrogen peroxide and sodium perborate remain in a tight supply position. Spot prices on cod liver oil are maintained at $2.30 to $2.50 per gallon. Thymol is still scarce but there are some in the trade who believe there may be an easing in the supply position within the next six or eight weeks. Production of synthetic caffeine is due to get under way in a $1,500,000 plant to be built in St. Louis.

Italian Olive-Oil Production

The 1944 production of olive oil in Italy aggregated 1,421,410 quintals (1 quintal = 220.46 pounds, or 8.4 per cent more than the 1943 production. This increase is due in large measure to a high oil content of olives, which in 1944 was 15.8 per cent, compared with 14.8 per cent in 1943.

The amassing of the olive-oil crop as of June 7, 1945, amounted to 478,974 quintals of olive oil, and an additional 50,000 to 60,000 quintals of edible olive oil will be extracted from olive residue. This total is lower than the 951,000 quintals forecast for south and central Italy for the 1944-45 season by the Allied Commission.

ESSENTIAL OILS

Bergamot Down

A more favorable price is quoted on Bergamot oil. The spot price now ranges from $9 to $10 a pound. It is understood that about forty tons of this oil recently arrived from Italy.

Peppermint Lower

Absence of any unusual demand and increasing supplies from distillation of the new crop are factors largely responsible for a further reduction in oil peppermint prices. Natural oil is now offered at $6.15 per pound and redistilled material at $6.50. Spearmint, however, remains in a very firm position with the price in the country remaining at $4 per pound.

Essential Oil Production In Guatemala

Oil of lemongrass and oil of citronella are produced in Guatemala in commercial quantities. The 1943 production of lemongrass amounted to 123,730 quintals (1 quintal equals 101.43 pounds), according to the Government, but the 1944 crop is reported to be smaller. Production of citronella in 1943 is estimated at about the same amount as lemongrass for that year, with an increase reported during 1944.

As a result of the reduction in imports of essential oils into the United States from the Far East during the war, interest in the production of essential oils increased in Guatemala, with emphasis on the possibility of raising Japanese peppermint, coriander, and cardamom as additional crops.

Rosemary Firm

Pure Spanish rosemary oil ranged from $1.35 to $1.60 a pound; technical grade held at $1.25 per pound. Spot stocks appeared adequate to take care of all inquiries. Political developments in Spain were watched closely, however, for future shipments at higher levels.

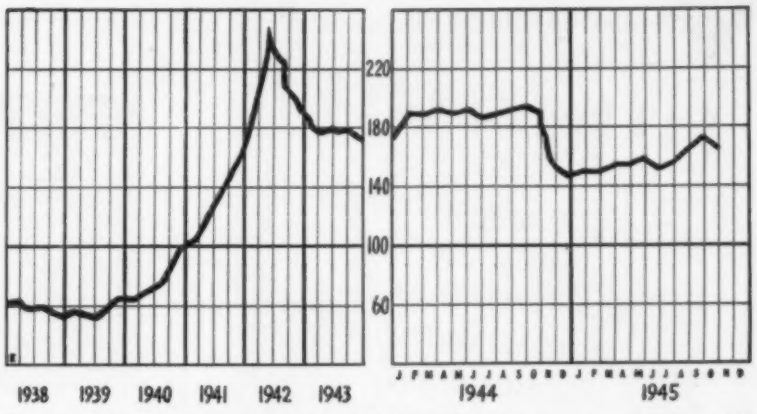
Cananga Declines

Holders of the moderate quantities of oil cananga on spot except the resumption of major exports from the primary market. Spot quotations have therefore been revised downward with native material at from $10 to $11 a pound and rectified at from $12.50 to $13.

Miscellaneous

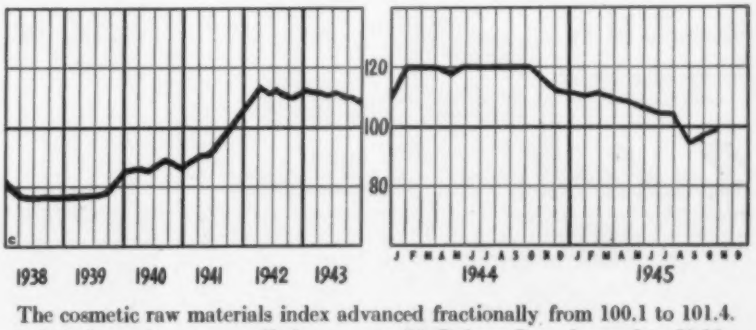
Lemongrass oil was lower at $2.35 per pound. Some houses believe the market has about reached the bottom since there is a steady absorption of spot supplies. Although it is understood some lots of Bois de Rose are afloat, the spot position has been bare of any material for so long it is quite likely goods now coming forward will find an immeduate outlet. Quotations on patchouli are entirely nominal. There are no stocks on hand. Eucalyptus and eucalyptol continue to display considerable strength in view of the shortage of spot goods. A more favorable price is quoted on Mexican lime oil. The article is offered at $7 per pound with the West Indian variety remaining at $7.25 to $7.50 a pound.

15 Essential Oils—Weighted Price Index. 1926=100



The essential oils index declined from 164.7 to 161.2. Bergamot was lower at $9; cananga dropped to $10; citronella declined to $1.50; peppermint was lower at $6.15. Eucalyptus and lime oils were higher respectively at $1.18 and $13.50.

25 Cosmetic Raw Materials—Unweighted Price Index. 1926=100.



The cosmetic raw materials index advanced fractionally from 100.1 to 101.4. Alcohol rose 2 cents; menthol was up to $4; Balsam Peru dropped to $1.10.

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•

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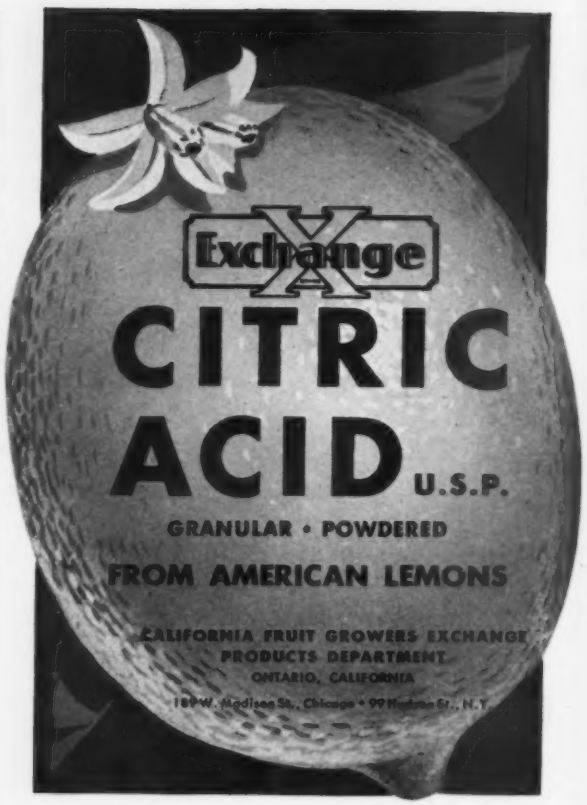

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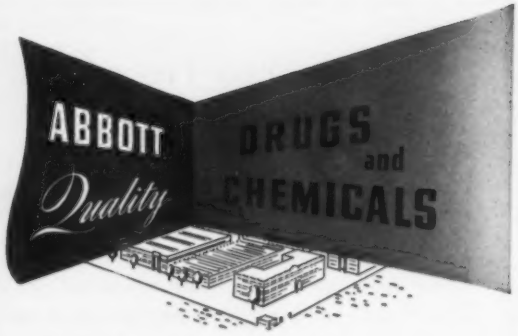

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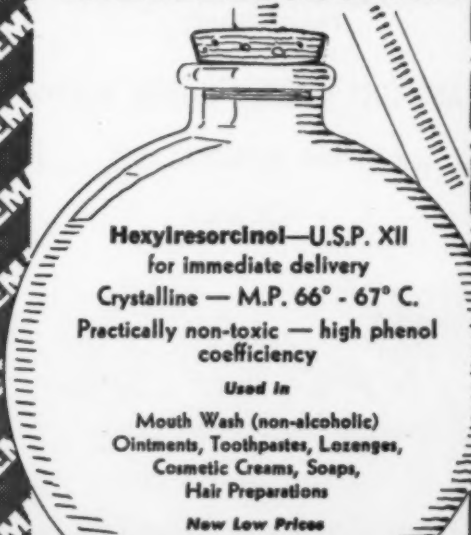

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Tropical Diseases

(*Continued from page 623*)

vaccine that will immunize an individual when going into an endemic malarial area and, according to Coggeshall,[14] the hope for such a weapon is far from promising. For years quinine and, more recently, atabrine has been taken routinely by those living in malarial areas in the belief that these drugs will act to ward off infection from the bite of an infected mosquito. Unfortunately neither quinine nor atabrine exert such an effect, nor is there any known drug exhibiting the desired prophylactic properties.

Nonetheless, despite this misconception, these drugs do have a suppressive value when employed under certain circumstances. While quinine and atabrine do not prevent a person from contracting infection they will check the multiplication of parasites sufficiently so that most protected individuals will not develop active clinical malaria during the period of exposure. This suppressive treatment is valuable, for example, to avoid incapacitation when men are brought into malarial areas for the purposes of construction, exploration or the like. However, withdrawal of men from such areas and the suspension of suppressive treatment may result in the appearance of acute clinical malaria about two weeks later.[12]

In writing on the treatment of malaria, Faust[11] says that it must be confessed that there is no known drug which is completely satisfactory in eliminating the parasites from the human body. What is recognized is that quinine and atabrine are moderately good drugs for taking care of clinical malaria and frequently, with the aid of the patients own immune mechanism, for cleaning out the infection, provided the victim is treated early enough and intensively enough

At present the control of malaria depends to a great extent upon elimination of mosquito breeding places, as by swamp drainage or the use of films and certain chemicals to destroy the mosquito larvae. Individual production still depends upon screens and nets and the use of insecticides and insect repellents.

Next to malaria, the dysenteries are considered the worst menaces of tropical countries. However, in some areas, such as the Middle East, dysentery was found to be the most common disorder among soldiers.[15] While these diarrheal disorders are not unknown in temperate zones, they are especially dominent in tropical and subtropical countries where there are much lower sanitation standards.

Military experience indicates that the bacillary forms of dysentery are far more common than the amoebic types,[6] even though the latter usually comes first to mind when tropical dysenteries are mentioned.[1] Bacillary dysentery, of which there are four main types, presents characteristic symptoms including fever, cramps, diarrhea and tenesmus. The feces usually contain pus, mucus and blood. The specific diagnosis depends on the identification of the etiologic agent in the stool cultures.[16]

It appears that about 20 per cent of cases become carriers for several months after disappearance of dysentery symptoms and these carriers are often sources of fresh epidemics. According to Eusterman,[3] reports suggest that the chronic form of the disease is increasing in this country, that it closely resembles ulcerative colitis, and that such complications as arthritis, myocarditis, vascular dysfunction, obstructive spasm and acute perforation may result.

Fortunately, the sulfonamides have proved to be very effective against bacillary dysentery, especially in the acute stages, so that chronic cases are much less likely to develop with the use of these drugs. Sulfaguanidine, the drug of choice a year or two ago, is giving way to sulfadiazine or succinylsulfathiazole. In the use of any of the sulfa drugs, fluids should be plentifully supplied and alkali administered in order to prevent urinary obstruction.[17]

More insidious, amoebic dysentery or amebiasis is an infection caused by the organism, *Endamoeba hystolytic*. Since the disease is transmitted through the ingestion of food or drink contaminated with feces of carriers, such carriers are of major importance in the continuation of this disorder. As noted by Egdahl[1], it is estimated that 5 to 10 per cent of the population is already infected and with returning soldiers from the tropics this proportion may be greatly increased. The carriers may harbor the infectious organism for many years without showing symptoms other than vague feelings of discomfort. However, the dysentery and other intestinal symptoms are but a small part of the picture of infection with the responsible parasite. Amebiosis may also produce liver abscess and do damage to other organs and tissues.

The drugs, carbarsone or chinofon are generally used for treating amoeba carriers. For acute or chronic amoebic dysentery, injecting emetine hydrochloride has long been an accepted mode of treatment.[18] Although often quite effective, authorities,[17, 18, 19] warn that this drug must be used cautiously because it is quite toxic; capable of injuring the heart and acting as a cumulative nerve poison. According to Meleny,[17] in acute amoebic dysentery it is usually necessary to administer emetine only for the first three or four days. Treatment by mouth should be started at the same time; using one of the iodine preparations like chinofon, vioform or diodoquin, or the arsenic preparation, carbarsone, in order to eliminate the intestinal infection. The British authority on tropical diseases, Manson-Bahr,[20] points out that emetine injections are not effective in chronic cases with amoebic cysts in the stools. He notes that an emetine-bismuth-iodine preparation, taken by mouth, has a direct action on the cysts and effectively prevents relapses.

Dengue fever, an infection that has proved quite troublesome to the armed forces in the Pacific,[21, 22] is a brief, self-limited disease, which though stormy in its course, takes little toll of life and leaves no residue.[6] Caused by a filterable virus transmitted to man by the bite of an infected mosquito, dengue fever has wide dis-

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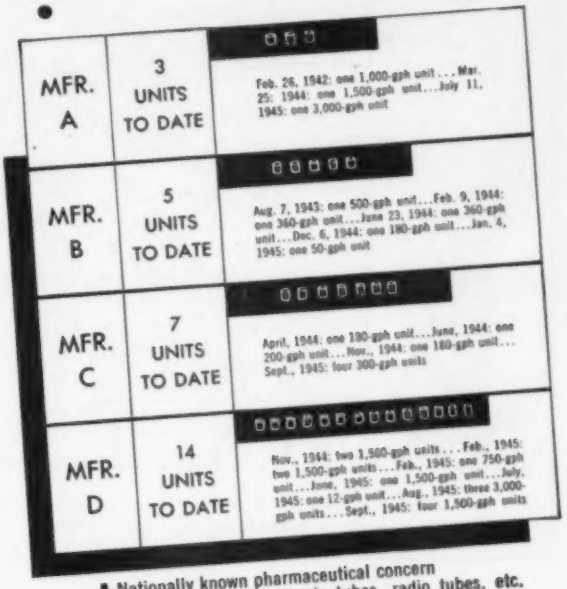
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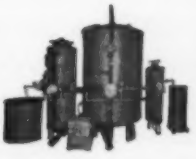

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tribution in tropical and subtropical countries. Endemic in some of the Southern States, the disease has also been noted as far north as Pennsylvania and New York.

At the conclusion of a variable incubation period, the disease is ushered in with an acute onset of chills, fever, malaise, weakness and severe aches and pains, especially about the eyes, back and lower extremities. The temperature rises rapidly, remains high for three or four days, returns to normal for a day or so and then rises again. Although convalescence may be prolonged, recovery is generally complete except an occasional infant or elderly person. Despite its train of unpleasant symptoms, very few deaths have been attributed to dengue fever.

Dengue fever has a number of interesting and very descriptive synonyms. Derived from the Spanish word "denguero" meaning dandy, dengue or dandy fever stems from the peculiar, stiff, unnatural walk of patients with the infection. Another synonym, "breakbone" fever describes the intense pains in the back, joints and eye muscles, while the term "bouquet" stems from the typical rash that appears on the third or fourth day of the disease.[23]

There is no specific treatment for the disease, hence symptomatic care is the most important consideration. According to Stewart,[24] reassurance, rest in bed and sedatives are important. Aspirin seems to control the discomfort, but has the disadvantage of causing excessive sweating. Phenobarbitol, given as a sedative at bedtime, is often insufficient and codeine combined with aspirin is required in most cases. During convalescence, despondency and irritability are often noted, but these seldom last more than a week or two.

Control of dengue fever, like malaria, depends largely upon elimination of the mosquito carriers. Comprehensive spray treatments of epidemic foci resulted in a sharp reduction of dengue cases in Honolulu,[25] and similar measures, including the rise of DDT solutions, controlled the outbreak in Saipan.[26] As remarked by Sapero and Butler,[21] dengue is predictable and often easily prevented by the institution of proper sanitary measures.

An ugly disease in its advanced stages, the appearance of filariasis in American troops poses both a medical and psychological problem. Caused by a lymphatic filarial worm (*Wuchereria bancrofti*) and transmitted by a number of species of mosquitoes, filariasis is prevalent in many parts of the tropics, particularly in certain islands in the Southwest Pacific. With an incubation period of six months or more, and perhaps as long as two, Saphir[27] feels that this disease may well constitute an important civilian medical problem. While the possibility of endemic foci being established cannot be overlooked, the probability of such an occurrence does not seem very great.[13] From the data gathered by Zeligs,[28] it appears that filariasis in a nonendemic area has a definite tendency to burn itself out after one or more reactivations.

In infected individuals the adult filarial worm in-

habits the lymph vessels and lymph nodes and causes attacks of acute lymphangitis which may ultimately lead to lymphatic obstruction and elephantiasis. American troops have become infected[21, 29, 30] and have been invalided home because of acute lymphadenitis or involvement of the lymph vessels of the scrotum. The attacks are accompanied by fever and redness, swelling, and pain of the part involved. As remarked by Meleney,[17] most patients who are removed from endemic areas in order to avoid repeated infection never develop elephantiasis, and it is hoped that this will be the case with American troops. "there is a strong psychologic factor involved," he writes, "in that infected patients have seen elephantiasis of the scrotum and legs in natives of the endemic areas, and fear impotence and deformity in their own cases. They may be assured that impotence will not occur, and that deformity is unlikely to develop."

Definite aid for patients with filarial disease is obtained by removal to a cool climate.[31] When removed from endemic areas, the disease appears to run a self-limited course and soon dies out.[28] Because of the mildness of the manifestations when caught in time and the definite tendency to spontaneous recovery, little experience has been gained with drug therapy. No remedy is known to cure the disease, but certain drugs, especially antimony preparations, are reported to be effective in reducing the number of nucrofilarial in the blood stream.[6] Of these, lithium antimony thiomalate appears to be the most promising.[32]

Of the several forms of leishmaniasis, the visceral type, or kala-azar is probably the most important. Endemic in parts of Asia, Africa and the Mediterranean area, it is caused by a minute protozoan parasite which is transmitted by fleas and sand flies.[3] With an incubation period as long as eighteen months, it is possible that this disease may appear in returning soldiers. With abdominal pain as an early symptom,[33] fever, enlargement of the spleen, anemia and leukopenia are the outstanding signs.[34] Polyvalent antimony compounds, like fuadin, neostibosan, neostam or stibatin, are usually effective in Gala-azar once the diagnosis is made.

Schestosomiasis or bilharziasis appears to have been prevented in the African campaign by adherence to the order that troops must not enter possibly infected water. Whether the disease will appear among men stationed in the Orient, where the disease is also endemic, remains to be seen. Caused by a blood fluke, with certain snails as intermediate hosts, the free-swimming larvae penetrate the skin of persons bathing or swimming in infected waters. Causing abdominal pain and the appearance of blood and pus in the stools, as well as other symptoms, the disease responds favorably to tartar emetic and other antimony compounds.[17, 35, 36, 37]

Yellow fever, formerly the scourge of the white man in the tropics, has been brought under control by the development of an efficient vaccine. While the danger of an epidemic is present, especially as a result of air travel,[38] close cooperation between public health

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officials makes such an occurrence rather improbable.[39, 40] Especially noteworthy is the fact that few, if any cases of yellow fever have been reported in the armed forces;[9] a marked contrast to previous wars. The example of yellow fever may well be used as a standard by which other tropical diseases may be conquered, thereby opening up great areas of the world to commerce and industry.

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Proteins Come of Age

(Continued from page 620)

Arnell, et al.[33] cited figures on the incidence of protein deficiencies in pregnancy. In a group of 400 unselected patients, 50 private and 350 clinic patients, presenting no obvious complications of pregnancy, it was found that the average daily protein content of the diet of 72 patients, or 18% was less than half of the optimum amount recommended for the latter half of pregnancy. Less than 10% of the 400 patients had diets which on the basis of protein content could be classified as excellent, and almost four-fifths consumed diets which were fair or less than fair in this important nutritional essential.

The estimation of the status of a surgical patient with regard to the presence or degree of protein deficiency is not simple. Main reliance in clinical work has to be placed on a nutritional history, on the patient's weight and on serum protein determined. The interpretation of serum protein concentration values is often difficult, particularly in surgical patients.

The results which follow inadequate protein nutrition are neither so characteristic nor so dramatic as those which follow other types of malnutrition. Subclinical protein malnutrition, although exceedingly common, usually causes little more than a slow and insidious wasting away of all the tissues, with associated weakness and general ill health. A demonstrable hypopro-

teinemia may develop and edema may ensue, but subclinical effects are far more common. The proper evaluation of these various considerations will make clear that close correlation between the protein content of the diet and alterations in the composition of the blood cannot be expected.[33]

For chronic conditions, oral feeding is the method of choice in correcting protein deficiencies. Increasing the amount of protein in a diet is one of the best general ways to improve a diet, for protein foods are usually good carriers of many other nutrients such as vitamins of the B complex group and minerals.[4] However, considerable effort on the part of the physician, dietitian and patient will be required to maintain protein intake at an optimum level.

In the presence of sufficient calories to supply energy needs, the generally recommended allowance of 1 Gm. of protein per kilogram of body weight for the normal adult is most ample, probably allowing a margin of close to 100% above the actual protein requirements. Thus a daily intake of 70 Gm. of protein would be recommended for the average adult. If a sufficient variety of protein food is eaten, it is most likely that good quality protein (furnishing all essential amino acids) will be obtained. It is often recommended that protein derived from animal sources constitute at least 65% of the total protein intake.

It is frequently difficult to consume more than 100 Gm. of protein daily, and a person not feeling too well and one confined to bed may even have difficulty in consuming 60 to 70 Gm. of protein without suffering digestive disturbances. In such instances the diet may be supplemented with protein concentrates as a supplementary source of amino acids. The use of protein hydrolysates helps to lighten the load on the gastrointestinal tract of patients. As some patients may need up to 300 Gm. of protein daily or some may have difficulty in swallowing food, it may be necessary to resort to either feeding by intubation or intravenous administration of protein supplements, or both methods. Blood, plasma, albumin, or various casein hydrolysates may be used as sources of protein. Both oral and injectable protein hydrolysates are being increasingly used for supportive treatment of hospitalized and postoperative patients, especially in gastric and serious burn cases. Whole blood transfusions are probably not of significant value in supplying protein. While whole blood contains sufficient total protein to be of nutritional interest, it is believed that its principal protein, hemoglobin, cannot in any circumstance be used as a nutritional protein.[3]

In the presence of actual or threatened surgical shock, the treatment of hypoproteinemia should be by the intravenous route and should consist of human blood, plasma or albumin or a combination of the three. The aim should be to restore the blood volume, red blood cell volume, blood plasma and plasma protein level to the point where the circulation is adequate. At the same time, it must not be forgotten that sodium chloride, various vitamins and other substances may be de-

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ficient and probably need correction. As soon as the imminent danger of shock is over, treatment should be shifted to other and less expensive forms of proteins. Protein feeding should be given intravenously until mouth feeding can be tolerated and should be continued as a supplement until oral feeding has been established at a sufficient level not only to maintain the patient in nutritional equilibrium but also restore at a rapid rate all tissues that have been depleted.[3]

Better healing of wounds, faster recovery from major surgical operations, more rapid healing of burns and ulcers, and in general a feeling of well-being are some advantages likely to be derived from careful attention to the protein requirements of surgical patients.

The nutritional aspects of convalescent care have been discussed recently by Peters.[41] It is important to administer as early as possible in convalescence sufficient protein to replace such loss, and also adequate carbohydrate and fat to provide for the caloric requirements so that the protein provided can be utilized for rebuilding of tissue and not for energy production. In this way a body protein deficit can be largely avoided and convalescence perhaps shortened and attended by fewer complications.[3]

Recently the committee on Convalescence and Rehabilitation of the National Research Council published a report[4, 42] in which the nitrogen and general weight lost following serious trauma and disease are stressed. As much as 50 Gm. of protein may be lost per day from exudates or discharge in peritonitis and open wounds. Furthermore, if there are not sufficient calories in the diet, protein is used as a source of calories. The report emphasizes the necessity of high protein intake as part of the general therapy and of beginning it promptly. The importance of good nutrition from the point of view of preventive medicine is emphasized, and optimum nutrition appears to be one of the most important aspects in the general treatment of convalescence and rehabilitation.

The increased protein requirements of the pregnant woman have been emphasized by the allowance of this nutrient factor recommended by the Food and Nutrition Board of the National Research Council.[43, 44] Their suggested allowances provide an increase to 85 Gm. for the average pregnant woman and to 100 Gm. for the lactating woman above the 60 Gm. suggested for the non-pregnant woman of equal weight. This stepping up of the protein intake to approximately 1.5 Gm. per kilogram of body weight during pregnancy and to 2.0 Gm. per kilogram during lactation in a woman weighing 56 Kg. presupposes a previously normal protein intake and nutritional status.

The clinical importance of an adequate protein intake in disease, pregnancy and following surgery is established. Protein hydrolysates appear, at the present time, to be the best form in which to administer the amino acids.

Cox and Mueller[45] made a most practical contribution when they introduced protein hydrolysates as dietary supplements. These investigators used a

purified casein and treated it with an inorganic acid. Later on, Cox and his associates[46] experimented with a digest prepared by enzymatic action.

Since the work of Cox and Mueller with casein digests, investigations have been carried out with digests of soybean, liver, lactalbumin, bovine serum albumin and many other protein sources. Up to the present, however, casein appears to be the most popular hydrolysate.

The practical commercial future of amino acids is tied up with the economical preparation of a protein hydrolysate which furnishes a well-balanced, patient-acceptable source of the essential amino acids. Synthesis of the essential amino acids are also worth keeping track of but at least for the present, the hydrolysates offer the most promise.

Clinicians are of the opinion that the ideal protein hydrolysate is yet to be found. They criticize the oral forms because of the unpleasant taste. The parenteral hydrolysates sometimes cause side reactions such as increased temperature, nausea and vomiting.

The development of a really clinically acceptable amino acids product offers a real challenge to the pharmaceutical industry. Indications are that important progress is being made. We know we voice the feeling of the medical profession when we say "the sooner the better."

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Streptomycin

(Continued from page 701)

experiments, they concluded that streptomycin was well tolerated by the animals and that there was some suppressive effect on infections in guinea pigs due to a human variety of *M. tuberculosis*. Obviously, the place of streptomycin in the treatment of human tuberculosis cannot yet be stated, though results of further investigations, made possible by the availability of streptomycin in large enough quantities for extended clinical investigation, will be eagerly awaited.

The control of bacterial infections with streptomycin in experimental animals, particularly of those caused by gram-negative organisms, offers the possibility of the future use of this new antibiotic agent in the treatment of many serious infectious diseases of domestic animals which inflict such enormous economic losses on livestock and poultry producers in America. Among such numerous diseases caused by gram-negative organisms may be mentioned Bang's disease, or infectious abortion of cattle, caused by the gram-negative *Brucella abortus*. Brucellosis of swine also occurs in various parts of the United States, but it is not so widely distributed as is Bang's disease in cattle.

The organism which causes cholera in fowls was first described by Pasteur in 1880. Since that time, the name *Pasturella* has been applied to a group of organisms causing not only fowl cholera, but also swine plague and hemorrhagic septicemia in cattle and sheep. *Pasteurella tularensis* is the cause of tularemia, otherwise known in human beings as deer-fly or rabbit fever.

Among the enteric organisms, which include the Escherichia, Aerobacter, Salmonella, Eberthella, and Shigella groups, are the gram-negative *E. coli*, causing the disease of young calves commonly called "white

scours;" *S. aertrycke*, affecting pigeons, chickens, ducks, and turkeys; *S. anatum*, causing the destructive diseases of ducklings known as "keel" by duck raisers; *S. choleraesius*, which plays an important rôle in necrotic enteritis and as a secondary invader in the disease known as hog cholera; *S. pullorum*, causing "white diarrhea" of young chicks and inflicting heavy losses to the poultry industry; and *Shigella gallinarum*, the fowl typhoid bacillus.

In the group of the hemophilic bacteria is the causative agent, *H. gallinarum*, responsible for the serious and widespread disease of chickens known as fowl coryza. Against this and the many other diseases caused by the micro-organisms of the genus *Mycobacterium*, productive of tuberculosis, and those of *Clostridium* which cause blackleg, braxy, dysentery, and "black disease" in sheep, and blackleg and "red-water" in cattle, the development of antibiotic agents such as streptomycin may prove, in the coming years, a curative weapon of enormous economic importance.

From the findings as to the utility of streptomycin in the control of bacterial infection in experimental animals, together with the results of studies on the bacteriostatic activity of streptomycin against a wide variety of pathogenic organisms in culture media, it is possible to predict that the probable diseases in which clinical treatment might be of value will include urinary tract infections due to one or more gram-positive organisms; tularemia; wound infections due to gram-negative common contaminants; typhoid fever due to various strains of *E. typhi*; Salmonella infections, both enteric and systemic; and meningitis due to *H. influenzae*.

Until quite recently, limited supplies of streptomycin were made available for experimental clinical investigation, but little has appeared in the medical literature concerning the results of these researches. Although only a few cases have been treated, streptomycin has been very successful in tularemia. Tuberculosis cases now are under treatment, but the effectiveness of streptomycin in the cure or treatment of tuberculosis probably will take years to evaluate. Odd cases of Salmonella infection have been treated with favorable results. The evidence is not convincing that the course of typhoid and undulant fever is altered by the use of streptomycin. In addition to the treatment of gram-negative wound infections, streptomycin has been used successfully in the treatment of pre- and post-surgical infections, and of traumatic injuries.

For many months, by means of pilot-plant operations, Merck & Co., Inc. has supplied military surgeons and civilian physicians with streptomycin for experimental purposes. Further extensive clinical studies of the many dramatic possibilities of streptomycin are dependent to a large extent on the increased availability of the drug. The construction of a new, separate production plant with its accompanying special drying and packaging units, at an estimated cost of $3,500,000, was recently announced by Merck, with the expectation of large-scale commercial production of streptomycin in 1946.

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Justin Dart

(Continued from page 631)

good location to supply a sound foundation on which to build big sales. Unprofitable small unit stores were ferreted out and sold as soon as conditions permitted. Particular emphasis was laid on the importance of building up each store's prescription business as it tended to give stability to what might otherwise be an up and down sales picture.

Almost a year to the day Dart was made Liggett president, it was announced that the Board of Directors had elected the former Walgreen boss to run the show for the whole United Drug, Inc. organization. Some of the skeptics who had been slow to accept Dart as much more than Walgreen's son-in-law scratched their heads and admitted that maybe the young fellow had something after all.

When able Justin Dart took over as head of United Drug, Inc., the reported consolidated sales for 1942 were $121,997,997. After two years at the helm, Dart had upped United sales almost $26 millions. Improved purchasing, smart merchandising and a top radio program have helped to show up the young United executive as one of the country's top business leaders. Personnel changes have also been made with a view toward attracting young men with ideas.

The latest Dart move to make United bigger and better was his recent announcement that the executive offices are to be moved from Boston to Los Angeles this fall. Besides providing a pleasant climate for Dart and his associates, the move to the west coast serves notice that United Drug is getting off to a fresh, uninhibited start to cope with post-war competition. New ideas will have a chance to flourish in the fresh untried soil of the West. Maybe in this case, Horace Greeley's advice to "go West, young man, go West" is the tonic needed to help clean-cut Justin Dart guide United Drug to new and profitable heights.

Dart himself is not what you might expect in a young $80,000 a year executive. He has an air of confidence but is not cocky. He does not feel that his contributions have anything but applied common sense. This unaffected modesty is a refreshing addition to Dart's qualities of business performance. United Drug's top executive has two interests outside business: his family and flying. Dart has four children: two boys, ages 12 and 14, by his first wife and a boy and girl, 4 and 2, by lovely Jane Bryan Dart. The Dart family live in a comfortable cheery home in Medfield, a desirable

Boston suburb. Next to family and business, busy Justin Dart manages to find time to act as transportation officer of the Massachusetts Wing, Civil Air Patrol. Dart is an experienced pilot with more than 2,000 hours to his credit.

To those who know Justin Dart best it came as no surprise that he turned down Sewell Avery's offer to head Montgomery Ward. With United Drug heading toward new horizons of achievement, Dart wants to be there to share the fruits of a hard-earned victory.

Wound Healing

Bibliography of article by William T. Doyle which appeared in the September issue

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Of The Drug and Cosmetic Industry, published monthly at Pittsfield, Mass., for October 1, 1945

State of New York, County of New York—ss

Before me, a notary public in and for the State and county aforesaid, personally appeared Thomas R. Farrell, who, having been duly sworn according to law, deposes and says that he is the Editor of The Drug and Cosmetic Industry, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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Bush & Co., W. J....710
Calco Chemical Co., Inc....600
Calif. Fruit Growers Ex...Insert bet. 592, 593; 714
Canfield Company, H. O....717
Carbide & Carbon Chemical Corp....610
Carr-Lowrey Glass Co....647
Celluplastic Corp....646
Chemo-Puro Mfg. Corp....727
Colgate-Palmolive-Peet Co....729
Colton Co., Arthur....682
Consolidated Fruit Jar Co....729
Consolidated Products Co., Inc....731
Continental Can Co....650
Commercial Solvents Corp....Insert facing 600
Cornelius Products Co....716
Corning Glass Works....634
Cosmia Laboratories....716
Creative Printmakes Group....655
Crown Cork Specialty Corp....653
Dallal & Co., D. C....729
Danco, Inc., Gerard J....704
Diagraph-Bradley Stencil Machine Corp....681
Dodge Cork Co....648
Dodge & Olcott Co....Insert facing 596
Dorr Company, The....674
Dow Chemical Co...Insert facing 592; 583; 656
Dreyer, Inc., P. R....588
Duche & Sons, T. M....711
Dunkel & Co., Paul A....697
duPont de Nemours & Co., Inc., E. I..Ins. fac. 593
Durlin Corp....Insert facing 604
Eisler Engineering Co....678
Emery Industries, Inc....Insert facing 612
Empire Box Corp....632
Eppenbach, Inc....680
Ertel Engineering Corp....682
Evans Chemetics, Inc....599
Ever Ready Label Corp....655
Factor & Co., Max....612
Fairmount Chemical Co....728
Felton Chemical Co., Inc....Insert bet. 604, 605
Fezandie & Sperrle, Inc....729
Fine Organics, Inc....711
Firmenich & Co., Inc....Cover 4
Fleetwood Laboratories....696
Florasynth Labs., Inc....Insert between 608, 609
Fontaine Products Corp....640
Food Research Laboratories, Inc....731
Foster-Forbes Glass Co....652
Franks Chemical Prod. Co., Inc....732
Freeman, John....728
Fritzsche Bros....Insert between 692, 693
Gardner-Richardson Co....Insert facing 636
General Drug Co....Insert between 612, 613
General Electric Co....679
Givaudan-Delawanna, Inc..Insert bet. 596, 597
Glycerine Producers Assn....689
Greeff & Co., R. W....712
Gunning and Gunning....722
Hagerty Bros. & Co....678
Hazel-Atlas Glass Co....Insert facing 668
Helfrich Labs., Inc....Insert bet. 612, 613
Hema Drug Co., Inc....717
Heyden Chemical Corp....Insert facing 608
Hinde & Dauch Paper Co., The..Insert facing 661
Hoffmann-LaRoche, Inc....594
Hooker Electrochemical Co....598
Hopkins & Co., J. L....695
Hormann & Co., F. R....682
House of Hollywood....711
Huisking & Co., Inc., Chas. L....694
Illinois Water Treatment Co....719
Industrial Chemical Sales....Cover 2
Inland Alkaloid Co....717
Innis-Speiden Co....721
Interstate Color Co., Inc....731
Intramed Co., Inc....713
Jelly & Co., Walter H....712
Kachurin Drug Co....700
Kelton Cosmetics Co....698
Kessler Chemical Co....706
Keto Chemical Co....714
Kimble Glass Co....Insert facing 669
Kohnstamm & Co., H....Insert between 608, 609
Kolmar Laboratories....Insert between 604, 605
Koster, Keunen Mfg. Co., Inc....687
Knox Glass Associates....Insert facing 653
Kurz-Kasch, Inc....669
Lautier Fils....706
Leeben Chemical Co., Inc....729
Lemke & Co., B. L....710
Lever Brothers Co....712
Lueders & Co., George....595
Lusteroid Container Co....654
MacHale, Inc., Ann J....712
Magnus, Mabee & Reynard, Inc....606
Mallinckrodt Chemical Wks....Insert facing 613
Malmstrom & Co., N. I....593
Mann Fine Chemicals, Inc....715, 731
Mantrose Corp., The....704
Maryland Glass Corp....Insert facing 637
McKay-Davis Co....702
Merck & Co., Inc....602
Metal-Glass Products Co....681
Miranol Chemical Co., Inc....697
Monsanto Chemical Co....662
Montenier & Co., Jules....714
National Can Co....586, 587
National Aniline & Chemical Co..Insert facing 601
Naugatuck Aromatics....609
Neumann, Buslee & Wolfe, Inc....713
New England Collapsible Tube Co....581
N. Y. Quinine & Chemical Works....589
Norda Essential Oil & Chemical Co....597
Orbis Products Corp....666
Oxzyn Company....603
Package Machinery Co....670
Paisley Products, Inc....651
Parento Co., Compagnie....608
Paris Cosmetics, Inc....604
Parsons Imports, M. W....694
Penick & Co., S. B....Insert facing 597
Pennsylvania Refining Co....727
Pfaltz & Bauer Co., Inc....728
Pfizer & Co., Inc., Chas....658
Pittsburgh Plate Glass Co....668
Plaskon Division (Libby-Owens-Ford)....643
Pneumatic Scale Corp., Ltd....Insert facing 645
Polak & Schwarz, Inc....731
Powell & Co., Inc., John....725
Prentiss & Co., R. J....686
Pulverizing Machinery Co....683
Remus & Co., Inc., Edward....723
Ritchie & Co., W. C....Insert facing 652
Roberts Mfg. Co....728
Robinson Wagner Co....696
Ross Engineering Corp., J. O....Insert facing 676
Sanitary Soap Co....585
Schimmel & Co., Inc....591
Seeley & Co., Inc....715
Seydel Chemical Co....716
Sherwood Refining Co....708
Smith, George F....716
Sperti, Inc....669
Stafford-Allen & Sons....590
Standard Alcohol Company....695
Standard Specialty & Tube Co....668
Stange Co., Wm. J....716
Stanton Laboratories....700
Stokes Machine Co., F. J....672
Stokes & Smith Co....680
Strong, Cobb & Co., Inc....592
Sturge Ltd., John & E....607
Summit Chemical Products Corp..Insert facing 684
Swindell Bros., Inc....645
Synfleur Scientific Labs., Inc....601
Syntomatic Corp....Insert between 592, 593
Taylor Co., Charles T....711
Thurston & Braidich....708
Toiletries, Inc....687
Tombarel Products Corp....718
Triangle Package Machinery Co....683
Ungerer & Co., Inc....Cover 3
Union Carbide & Carbon Corp....610
U. S. Automatic Box Machy Co., Inc....Insert facing 685
U. S. Bottlers Machinery Co....678
U. S. Industrial Chem., Inc., Insert bet. 664, 665
van-Ameringer-Habeler, Inc., Ins. bet. 588, 589
Vanderbilt Co., R. T....713
Van Dyk & Co....Insert facing 600
Verley & Co., Albert....Insert between 584, 585
Viking Paper Co., Inc....668
Vorac Company, The....715
Warner Brothers Co....638
Welch, Holme & Clark, Inc....686
Whittaker, Clark & Daniels, Inc....605
Will & Baumer Candle Co....710
Wimpole Chemical Labs....715
WJW Radio Station....720
Wolf & Co., Jacques....717
Zimmerman Incorporated, N. F....596